THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. **MONTHLY.** SIMON BROWN, S. FLETCHER, } EDITORS.

DESTROY THE WEEDS.

ONE MILLION of dollars, large as the sum is, would not probably pay for the labor annually expended in the New England States, in exterminating weeds, whose seeds were sown with the grass seeds. Hence, in preparing lands for laying them down to grass, no operation in the work is so essential as that of securing such seeds as it is desired to sow, *and those only*.

There is only one way of securing this, by cultivators, and that is by owning and using, in each neighborhood of farmers, a good separator, which will separate ten bushels of seed in an hour, and divide them into a dozen different boxes, if there are as many kinds of seeds. Such a separator may be found at the agricultural warehouses, and would be cheap in any of our farming towns at almost any price.

Our fields are now white with the blossoms of the *ox-eye daisies;* they cover thousands of acres, and in many instances almost to the entire exclusion of the grasses. It has become a great nuisance and source of loss to the farmer. Cattle may taste it occasionally, but only taste it, and refuse it as winter feed, when it is a hard, bitter plant. It propagates itself with great rapidity, appearing first in stools, and throwing up a cluster of stems some two feet high, but soon extends itself all over the ground, and throwing up single stems in every direction. It takes the place of the grasses, and is an expensive nuisance.

Another, and one scarcely less annoying and expensive, is *field sorrel*. Well was it designated as "Nature's grave clothes." It probably covers thousands of acres of sandy loam lands in Massachusetts at this moment. But it is not confined to such lands; it finds its way into heavy clays, clay loams, and into every soil that is cultivated. It has creeping roots, which pervade the soil in every direction, and any portion of them left behind will soon throw up a new plant.

Then we have the *sour dock, curled dock, narrow and broad-leaved dock*, all unsightly and troublesome weeds. They have long and stout roots, which require the strength of a strong man to pull them up. Cutting them off two or three times in the course of a summer seems only to encourage them.

Still another is the *chicory* or *succory* plant, one of the most persistent and obstinate grow-

ers in the vegetable world. We have cut off the same plant with a spade an inch or two below the surface, ten different times in a summer, and still it flourished beyond all other plants of the field. Its stem rises from two to four feet. The flowers are a bright blue, and quite showy.

It was a foreigner, but is becoming extensively naturalized. It has a large and long tap root, which goes to make up a considerable portion of what is sold for coffee in the shops. Left to its own powers of propagation, we think it would cover a fifty acre farm in a few years.

Then we have the *buttercup*, or *crowfoot*, with its fair name and face. These are all there is to commend it. It is a highly acrid plant; cattle do not eat it in the pastures; it is hardy, and soon drives out the grasses.

There are many other weeds that are costly nuisances to the farmer.

What are we to do about it? Who introduced them? Did any of their seeds come to us by a cool, money-maker's design, or were they accidentally brought to us? Let us see.

Some years ago the members of the Royal Agricultural Society of England offered a prize for the best essay on "*Agricultural Weeds.*" It was awarded to Professor Buckman. He says the following extract from the letter of a French dealer in London, addressed to the well-known seed establishment of the Messrs. Sutton, of Reading, Eng., will show how systematically this fraudulent trade is carried on:

"I have sold this day some India rape-seed for *mixing* with turnip seed, and enclose a sample. If you will have some at 56s. per quarter, in the docks, you can have it, if unsold, to your answer. I have some East India radish seed at 9s. per bushel. If you want some for mixing, I shall be very happy to serve you."

A man guilty of such frauds as these deserves to be shot with some of his own vile mixtures.

There are two ways to prevent sowing the seeds ourselves. One of these we have already suggested. The other is, that no dealer in seeds should sell any until he has had them thoroughly examined by a competent person, and separated, if there is a mixture. No sensible person would decline paying the additional cost of such cleansing.

The duty before us now is to allow no weeds to go to seed in our fields. When they are in mowing fields, cut all before the seeds are ripened in the weeds; and where they are in the cultivated crops, see that none ripen. Weeds multiply themselves surprisingly. A stem of wheat may have twenty-five or even fifty kernels upon it; but some of the weeds we have mentioned would be more likely to have some thousands of seeds than only fifty! On this point we will remark further hereafter.

For the New England Farmer.

CUTTING AND DRYING GRASS.

The time to cut grass and the amount of drying it needs in order to keep well, are important questions. There is no crop that the farmer of New England raises, that exceeds in value that of grass. Hence the best way of saving it is of the greatest importance.

If the farmer wishes to cut but one crop of grass from the land in a year, it should be done when he can secure, every thing considered, the greatest value. In my opinion, that time is when it is in full blossom. Cut at this time and well cured, it certainly makes the best hay. I judge this to be so, from the fact that cattle of all kinds are very fond of it, and, when otherwise cared for, always thrive upon it. Cut at a later stage, while ripening its seed, there may be a larger bulk of hay but of much less value. It may keep the same number of cattle longer for the reason that they do not like it as well, and consequently will not thrive upon it. This is one reason why some cut their grass late, because the stock will not eat it up so quick. Another reason is, it takes less time to make it.

Farmers who have much grass to cut, and comparatively a small amount of help to do it, should commence some time before the grass is in the blossom, that they may not be too late on the last cutting. When there is a good prospect of fair weather, cut the heaviest grass, and when it is otherwise, cut the lightest, and that where much time and labor are required in getting it.

How much grass needs to be cured to keep well, can be answered by saying that the water or sap, which is the same thing, should be nearly all dried out of it; just as you would evaporate the water contained in maple sap in order to keep it, or as you would dry fruit in order to keep that. Farmers need not talk about cutting clover in bloom, averaging two tons to the acre, and in ordinary weather curing it sufficiently in one day to keep well in the mow. It cannot be done. No man of common sense believes it can. It is true that grass will make more in one hour sometimes than it will during a whole day at other times.

Do grasses drying in the heat of the sun lose any of their value as food for stock? Particles of matter pass from grass while dry-

ing, else we could not smell it. Such particles may be very minute and of little value.

It is not necessary to dry grass so much that it cannot be moved without crumbling and wasting. It should be prepared for the fork and then dried more if necessary. However, it were better to lose a few crumbles in handling it than to lose the whole by being got in so damp as to heat and mould in the barn. It is not necessary to dry grain for the bin as thoroughly as we should were it to be ground for coffee, in order to have it keep after putting it in a dry place; yet who would think of putting grain in a bin so damp as to have it heat there? Or who would lay away dried apple when so damp as to mould and rot?

JOEL HERSEY.

Williamstown, Vt., June, 27, 1870.

For the New England Farmer.

THE LENTIL.

The Journal of Agriculture and Transactions of the Highland Agricultural Society of Scotland, gives the following account of this plant:—

"The lentil is a New British crop. We spoke in the Journal of Agriculture for July, 1851, of that ancient vegetable, so often mentioned in the Bible, so prolific and above all so nutritious, which M. Guillerez, a French professor in our city, has acclimatized by his unwearied efforts at great cost and without any other reward than the gold medal of this society. In 1851 M. Guillerez saw his disinterested efforts repaid for the fourth time with a success beyond his most sanguine hopes. From a spot sloping to the north and exposed to all winds, at the back of South Queens Ferry, he gathered two and a half bushels, weighing 167 pounds, from five and three-fourths pounds sowed, although the rain in August spoiled a great part of the crop, which was then budding. The lentils, sown between rows of beans, have produced on an average 30, 25 and as much even as sixty-one for one. Besides he had a splendid crop of beans, and also cabbages, cauliflowers, salsify, beets and leeks all flourished most beautifully. The lentil rows were propped up by stakes. If the lentil crop had not been injured by the heavy rain of August the product would have been an hundred fold. M. Guillerez tried them as forage. He cut them off twice and they grew to the height of four feet."

The American Institute of the city of New York, says:—"It is now some years since we recommended the cultivation of the lentil in our Farmers' Club meeting. We were induced to do it in consequence of the representations made by a distinguished officer of our government, who had suffered from dyspepsia for many years. Having seen an account of the wonderful cures performed in Paris by a new vegetable medicine called *Erva-lentil*, he bought some at a dollar a package of about a quarter of a pound, eat it, as directed, in the form of a porridge and got perfectly well. On some investigation we learned that this famous medicine was flour of lentils. We sought for the lentils, found some at a grocer's, whose stout, healthy appearance caused us to ask if he lived on lentils. He replied that he sent to Germany for them for his own use, and had been restored by them to sturdy health, from a wretchedly low condition. He sold some of them to us at ten cents a quart. We distributed them frequently among the members of our club at their meetings. Further accounts are contained in our Transactions published by the State. We still urge young America to add to his list this valuable grain. It is partially introduced into Europe—more in Germany than anywhere else." N. WRIGHT.

Brokenstraw, Chautauqua Co., N. Y., 1870.

FEEDING AND WORKING HORSES.

Where one has smooth land that can be mown with a machine, it is a great mistake to turn working horses out to pasture in summer. There can be no question that land will produce more food when the grass or clover is allowed to grow until it is in flower, than if constantly cropped down as it grows. With a good mower, tedder, rake, and unloading fork, the expense of getting the hay into the barn, if it is a good crop, need not exceed two dollars a ton. In the summer let the hay be cut into chaff and soaked in water for twelve or twenty-four hours, and the horses will eat it almost as readily as they will fresh grass. With the proper boxes for soaking it, the labor is very slight. I used to chaff my hay with a horse-machine, cutting up enough at a time to last for several weeks; but I question if it is not better, after all, to cut it every day by hand, as it is wanted. One of Gale's Copper-strip machines will cut in two or three minutes all the hay a team will eat at a meal; and if the knives are sharp, it is mere child's play to turn it. The object of soaking the hay chaff instead of merely moistening it in the ordinary way, is to soften it and allow it to absorb water—just as we soak dried apples before cooking them. Of course, we must not use more water than the hay will absorb, as in such a case it would wash out the sugar and other soluble nutritive matter from the hay. It is true that if the water is used for soaking the next feed of hay, the sugar would not be lost, provided it did not ferment. A little experience will enable any one to regulate the matter. Horses so fed, with a little grain, will fill their stomachs sooner and have more time to rest, and will be able to do more work than if turned out into a pasture—and in the morning you know where to find them and can eat your breakfast with dry feet. But the horses must be well groomed, especially at night, and the stables properly ventilated

and kept clean and sweet. No food should be left in the manger. If it is not eaten up clean, it should be removed before the horses are taken from the stable. I would give them what hay they would eat in the rack, but none to waste. I have a span of horses that will pull out from the rack, and waste more hay than they eat, if allowed an unlimited supply. They should have a little hay in the rack to eat when they first come in from work, and after the harness is removed and they are rubbed down a little and are cooled off, give each horse a peck or so of cut feed. When he has eaten this let him be watered, and then give more cut feed. The practice of watering the horses at the pump or pond, as they are brought from the field, is not to be commended. A careful farmer may do it with impunity, because he would not allow them to drink too much when they are hot or tired, but many a good horse has died from careless watering.

If horses are worked steadily from 7 A. M. until 11.30, and then from 1.30 to 6 P. M.—say nine hours, they will accomplish more than if they were kept longer in the field and rested every few hours. When I hear the horn blow about five o'clock in the afternoon and see great, stout young fellows leisurely walking to the house to eat their cookies, leaving their teams tied to the fence, or with their heads hanging down in the furrow, I think this may be a good country for men, but a hard one for horses. Because a horse cannot grumble and a man can, is no reason why the horse that does the hard work should not eat as often as the man who drives. By keeping on until seven o'clock instead of five o'clock, and spending half an hour at lunch, the horses are kept out an hour longer in order to do half an hour's work. Would it not be better to keep right along until six o'clock, and thus let the horses have an hour's more time in the stable to eat before lying down to rest for the night? There would then be plenty of time to clean the horses, and attend to many little things that are now neglected. And, from the horses being in better condition, more work would be accomplished. In haying and harvesting, of course, we must often work as long as we can see, and the men, and horses too, should have lunch. But in plowing, harrowing, cultivating, and other ordinary farm work, there is no advantage in keeping horses out so late, except occasionally in getting in the seed, &c. and when such is the case the horses need lunch just as much as the man who drives them.

Let the boys, when at work in the field, have lunch, morning and afternoon. *They* need it. When I was a boy, I went to plow at six o'clock, which was my father's rule, and I can recollect how terribly hungry I got by nine o'clock, and how good a little bread and cheese and beer tasted about half-past nine or ten.—*J. Harris, in Am. Agriculturist.*

For the New England Farmer.

THE GARDEN IN AUGUST.

Who will say that a garden is not a good thing to have on the farm in connection with household economy at this season of the year? The products seem to find and fit an appropriate vacancy in variety for the table. Fresh, crisp, vegetables, right from the earth! How they refresh the weary laborer! None so relished, none taste so sweet and fresh as those gathered from our own garden,—planted, watched and cared for by ourselves! What wonderful changes we observed from the time the frail seed was deposited in the soil, till the full grown vegetable was ready to be plucked for the table, and what a field and opportunity for study and comparison. What caused the seed to unfold and grow into the plant producing its kind? Who can tell us all the intermediate changes of the circuit? The chemist will resolve the composition of the product into its varied elements, showing the proportions of each; but here his capability stops. Having the exact elements, he cannot again recompose them to form the vegetable. Only one human way is there known of reproduction. "Except a corn of wheat fall into the ground and die, it abideth alone; but if it die, it bringeth forth much fruit."

Our labors, if they have been judiciously directed, are now being rewarded by generous supplies of all the various delicacies of a good and well kept garden. These may be kept up so long as our variable climate will admit,—till Jack Frost locks up the teeming earth for a season of repose and recuperation.

The spaces from which early crops have been removed, may be made to yield yet another quick growing crop,—turnips, cabbage, spinage, radishes, &c. Only a partial advantage of the garden is reaped if only one crop is gathered from the same soil during the whole season.

Asparagus.—It is well to keep the bed clear of weeds, to encourage the development of the plant and seed. If it is desirable to increase from seed sow it at once, in well prepared soil, as soon as fully ripe.

Beans.—We shall now be enjoying the snaps and shell from the poles; be sure and save a few of the earliest and best to ripen for seed. This consuming all the first maturing and best, and saving for seed the leavings, is the cause of degeneration. A few early bush may be planted to furnish late strings, and for pickling, and canning for winter use.

Beets.—As you pull out for use, take them from where they stand the thickest, leaving room for those left to grow. The culture should be continued to keep the ground well loosened and free from weeds.

Blackberries.—Pick as fast as they become fully ripe. But all are not ripe that color. Some varieties need to hang sometime to mature sufficiently for eating. The

means of preserving are so simplified that we may now have this fruit the year round, by canning, making into cordial, &c.

CABBAGE, CAULIFLOWERS AND BROCCOLI need have the soil kept moist for them to best perfect themselves. Frequent hoeing and deep stirring the soil is the most practical way of accomplishing this result. Seed may be sown for fall greens, and plants for wintering in cold frames—although next month is soon enough for the last.

CELERY.—Late planting is the best way to obtain a winter supply of this much prized salad. Plant any time this month. The successful grower will tell you there is nothing easier than to produce this vegetable in perfection,—tender, crisp, and juicy, but you must first learn how. To produce it nice, tender, and juicy, the growth must be rapid; to secure this, the soil must be rich, and the plant not be allowed to want for suitable moisture.

CORN.—We shall now be enjoying good sweet corn, roasted and boiled, and with beans as succotash. Mark some of the earliest and best ears to ripen for seed. The cornworm eats downward from the silk to the kernel. These pests are very little known with us, but in some sections they are quite troublesome and need looking after.

CUCUMBERS.—This cooling, cholera-breeding, vegetable is now in its best stage for the table, and the vines will be yielding full pickings for pickles. To keep them in bearing to the best, they should be close picked. Save a few hills for growing seed and allow only a few of the earliest and best formed to grow. Ripe cucumbers, when properly prepared make good sweet pickles.

CURRANTS AND GOOSEBERRIES.—The best time for pruning is soon after the fruit is all removed. A considerable proportion of the old wood should be cut out, and the shrub shaped to desired form, whether as tree or bush.

EGG PLANTS.—Encourage to early ripening by hoeing, slightly hilling, and by placing a board painted white so as to reflect the heat and sun upon the plants.

GRAPES.—Tie up the leaders to the trellis. Keep a sharp look out for insects, caterpillars and worms. As we increase the culture of the grape, enemies of various kinds increase, and unless we zealously guard against them they will very likely reap where we have sown. To prevent mould and mildew, the side shoots of bearing branches that have been pinched off, must be shortened-in to induce early ripening of wood and the formation of fruit buds.

MELONS.—If only three or four specimens are allowed to grow on each vine they will usually be larger and of finer flavor. A broad flat stone or a board placed under specimens will keep worms from them and cause them to ripen more evenly.

ONIONS.—Gather for use and for market as soon as they ripen. Where they are to be kept any time, it is better to leave them exposed to the sun after being pulled, till properly cured, before storing. Seed may be sown for "pips" to be left in the ground over winter for early use next season.

PEAS.—Most of the earlier planted will have yielded their fruit; the ground may be cleared, the vines fed to the pigs, cows, or be cured and stored for winter fodder. Plant the ground to some crop so that no space be lost.

POTATOES.—Harvest and market early crops. Compost or burn all tops; the last is the better way of treating those diseased or much infested with insect enemies.

RASPBERRIES.—Cut out the weakest new growth, leaving only what is desired for the next crop or for increasing the planting. Keep them properly tied to their stakes or trellises. It is a good plan to hoe in a good dressing of compost and ashes, around the plants.

SEEDS.—Save the earliest and best specimens of every desirable kind for perfecting seed, and when well ripened save, dry suitably and lay away in some dry cool place for future use. It is always better to grow the majority of seeds one desires, the professional seed grower to the contrary, than to depend upon the market. Carefully label each variety and keep secure from vermin.

SQUASHES.—Destroy insects, remove the eggs of the squash bug from the leaves, and look out for borers.

STRAWBERRIES.—For fall planting, August is the best time; but spring planting at the North is much the best and safest time, generally.

TOMATOES.—Continue to train and trim the vines, and destroy the worms by hand-picking. The worms cannot hurt you, however much you may read read of them, at least we never saw one that could do any injury to man. W. H. WHITE.

South Windsor, Conn., 1870.

TO CURE HARD MILKING COWS.—This is my answer to that question, *i. e.*: "How shall I cure my hard milking cow?" Take a clean, smooth knitting needle wire, No. 16, heat it red hot, (use a candle at your side, and heat about one-half inch from the end,) and burn out the orifice. Perform the operation quickly, (say one second,) and the cow will not move, nor will she notice it afterwards. No blood runs, no soreness occurs. I have known it to be tried, and never knew it to fail. Don't wring or twist the needle; straight in and straight out, quickly, are the directions. If you wish to use a larger or smaller needle, do so, but not so large as to make the cow leak her milk.—*D. R., Fredonia, N. Y. Censor.*

For the New England Farmer.

FLOWER GARDENING FOR AUGUST.

"By the breath of flowers
Thou callest us from city throngs and cares,
Back to the woods, the birds, the mountain streams,
That sing of Thee. And Thou bidest
The lilies of the field with placid smile
Reprove man's feverish strivings, and infuse
Through his own soul a more unworldly life
With their soft holy breath."

We trust that many of our readers will this month reap the reward of all their labors, in the sweet fragrance and brilliant colors of flowers which their own hands have planted and cultivated. Gray, the poet, was also a skilful gardener and naturalist, and he observes that the chief enjoyment of life exists in "having always something going forward." "Happy are they," he says, "who can create a rose tree or erect a honeysuckle." It is the daily growth of each plant and flower which constitutes the chief part of the delight of the amateur gardener; the fragrance and beauty of the "bright consummate flower" form the crowning gratification. There is a pleasing pride in walking out in the morning with a flower of one's own raising, sparkling in the button-hole. It mentally elongates a man's vertical longitude, and is a most honest and desirable kind of pride—a pride that keeps a man from saloons and the destruction which walketh in the darkness. The creation of a beautiful object is certainly a great fact to be justly and honestly proud of, and the lowest intellect can produce flowers which even Solomon in all his glory could not eclipse! The love of flowers seems a naturally implanted passion, without any alloy or debasing motive. We cherish them in youth, and the love of them is not lost when age has whitened the hair and palsied the hand. Summer flowers are harbingers of good will, and we love to distribute them with lavish hands, to both young and old,—delighted to delight others with the harvest of beauty our grounds contain. There is constant occupation in amateur gardening. Nothing looks more unseemly and slovenly than weeds and untrained plants.

Tall, growing plants must be carefully trained to stakes, which should be straight and strong enough to support the plants. Much taste and judgment can be exercised in staking plants effectively. The stake should always be put at the back of the plant, so as to be concealed by its foliage, but in some instances where the plant has several stems, the stake should be placed in the middle, and the stems tied round it, not in a bunch, as we often see them, but each stem tied separately to the stake, taking care to arrange them gracefully, and allowing the leaves and flowers to hang in their natural position. Verbenas, if planted in mixed borders or small gardens, should be tied up, giving a stake for each shoot, and training them in the shape of a fan. When the plant is in full growth and flower, the outspread shoots will produce a fine effect.

Mignonette can be sown in pots, at this season, for winter blooming, and can be kept in bloom throughout the year. The soil should be light, sandy, not rich, otherwise it grows too rank, and loses, in a degree, its delicious odor, which constitutes its charm. If old stalks are cut off before the seed pods form, new blossoms will put forth, and the blossoming continued for a long time.

A correspondent inquires "how to raise a *Mignonette tree.*" It takes two years to produce a fine specimen. The seed must be planted in a five or six inch pot, with a goodly mixture of sand in the soil. Plant three or four seeds, lest one should not germinate; but do not allow but one to grow. As soon as a lateral or side shoot appears, nip it off, and throw the whole strength of the plant into the main shoot. Continue this process for a year, not allowing any buds to form, and tying the main branch to a stake. When the plant is six to eight inches high, the side shoots may be allowed to grow, and the tree formed in a graceful shape. It is well to allow the branches to grow in a fan shape. The soil may be enriched once a month with guano water, or weak manure water, and the blossoms will form thickly and continue in bloom all the season, making a most beautiful plant for a "Window Garden." Mignonette does not require much sun-light, but loves the shade. A stiff piece of copper wire makes the best stake for a "tree," and it must be tied to it when the plant is two inches high, tying it loosely, with a worsted thread. In pinching off the side shoots, the leaves nearest the stem must be left, as a plant breathes through them—they are its lungs. When the pot is full of roots, shift it to one a size larger. The side shoots must occasionally have their ends pinched off, to force them to form a bushy head of ten or twelve inches in diameter. When this is accomplished, you will have a "tree" of delicious fragrance, which will perfume a large room. By pruning the "trees" and shfting into larger pots, as they require it, these plants will last several years.

Tulips and Hyacinth roots should be taken up in this month. Many growers of these flowers allow them to remain in the same place three years, but it is much better to take them up every summer, when their leaves are quite decayed, but not before, and keep them until the last of October in a dormant state. They are usually propagated by offsets, which should be removed from the parent bulb at the time they are taken from the ground. They can be raised from seed, but as they will not flower for seven or eight years, this mode of culture is employed only by rich amateurs and florists for the purpose of obtaining new varieties. Bulbs are storehouses of prepared pulp, laid up by the plant for its use the following summer, so the larger and fuller the bulb is, the more beautiful will be its flower.

For this reason the seed-pod should be picked off when the plants have flowered, as maturing the seed exhausts in a degree the strength of the bulb, and as the leaves have their work to do in preparing the bulb for the next season, the plants should not be lifted from the ground until they are sere and yellow. Take up the bulbs when the ground is dry, spread in the shade to dry, and when somewhat hardened, separate the large ones from the offsets and put into separate bags or boxes. In the autumn plant the latter by themselves in any sunny part of the garden, and if they attempt to flower the next season, pick off the bud, so as to give its strength to the bulb. The next year they will flower finely. Hyacinths begin to decay almost before the bulb has become fully matured. Therefore it is well to assist nature a little, so when the plants are taken up they should be laid in ridges, with the bulbs covered with earth, and the leaves and stem left exposed to the air. Thus treated, the leaves speedily decay, and the bulbs attain their full growth; then they should be left to harden a day or two in the shade, and afterwards packed away in sand until late in the season.

Frittillarias, Crown Imperials, Narcissuses, Jonquils, and other bulbous plants, after flowering, may be taken up for the purpose of separating the offsets. Frittillarias will not bear to be kept out of the ground any length of time, and therefore should be planted again immediately. Indeed, with the exception of tulips and hyacinths, the dormant periods of bulbs are so little known, and differ so widely, that it is best to err on the safe side, taking as a general rule that weak bulbs should not be kept out of the ground more than a few days—stronger ones about a month.

The Begonia Discolor is a very ornamental variegated-leaved plant, and as it requires to be kept in a dormant state throughout the winter, it takes up no room among our house plants. It is commonly called "Blood-leaf," from the rich crimson veinings of its leaves. As soon as its stem and leaves decay, it should have no more water that season, and be put away in a dry cupboard, cellar, or any place where it will be kept from damp and frost. Early in the ensuing spring it must be taken from its winter quarters, and repotted in rich, loamy soil; after which it should be liberally watered through the summer, and have all the sunshine that it can drink in until the decay of its leaves announces that it is ready to hybernate. It is a beautiful addition to the popular variegated plants for which we have quite a "mania." Yearly they increase in gorgeous beauty, and their insignificant flowers are of no consequence excepting in the propagation of the plant. Yet some of the golden-margined geraniums possess very brilliant, handsomely shaped flowers. "Golden Pheasant," now in bloom in our garden, has as handsome a blossom as "Gen. Grant,"—its color is as vivid a scarlet, its shape as elegant, but the truss of flowers is not as large. Next month is the season to start cuttings from our favorite Geraniums for flowering the ensuing season.

S. O. J.

NEW PUBLICATIONS.

CRANBERRY CULTURE. By Joseph White, a Practical Grower. Illustrated. New York: Orange Judd & Co. 1870. Price $125. 126 pages.

Since the publication of Mr. Eastwood's book on the Cranberry, in 1856, the cultivation of this fruit has wonderfully increased, and many new facts have been added to the previous stock of knowledge in relation thereto. A new work to embrace more modern experience was therefore needed, and we have had inquiries from correspondents for such a book. We think the author has succeeded in his purpose "to embody, in a plain and concise manner, all the useful and practical facts which study and experience have yielded to the inquiring cranberry grower of the present time." The last chapter in the book is devoted to letters from practical growers, in reply to inquiries by the author. As an appendix, the report of William C. Fish, to the Cape Cod Cranberry Grower's Association on insects injurious to the cranberry,—an excellent paper,—is re-published. The publishers have presented the editor's labors in an attractive form, and the many excellent illustrations add much to the value as well as cost of the book.

THE TENTH ANNUAL REPORT of the Board of Agriculture of the Province of New Brunswick. Fredericton, 1869.

This board has the general supervision of the agricultural interests of the colony, including the auditing of the accounts of the local societies, some thirty-five in all, which received last year from the treasury of the Province between eight and nine thousand dollars. Irregularities, to use a mild term, were discovered in the management of a few of these associations, not very creditable to the fair dealing of some of their managers. Money was drawn on bogus names, and other practices were exposed which seem to show that the Yankees are not the only "sharp" people in the world. But the firmness exhibited by the Board will probably check like operations in the future. The Report shows that the Board has an industrious and efficient worker in the person of Chas. S. Lugrin, Secretary, Fredericton. The Report embodies a large amount of information in respect to the agriculture of New Brunswick.

—Of the multitude of fairs to take place next fall, special attention will be claimed for the exhibition at Augusta, Georgia, of the "Cotton States Mechanics' and Agricultural Fair Association." This is to occupy nearly the whole of the last week in October, and will be one of the most extensive festivals of the kind ever held in the South.

CARBOLIC ACID.

THE efforts of scientific men and women are constantly discovering some new thing which tends to avert human toil, to increase the products of the earth or the factory, and to facilitate transportation. They pry into the mysteries of the skies, explore the vast beds of the ocean, and the profound depths of the solid earth.

Many of the old customs of men are fast disappearing. We smile at the simple habits of our English ancestors of only a few hundred years ago, and wonder at their want of intelligence and foresight in the construction of their dwellings, carriages, tools, machinery, and the barrenness of their homes in most articles now so highly prized by us in our domestic life.

Now, light and air are admitted into our rooms, where, with them, a "port-hole" subserved the same purposes. A stone chimney and a yawning fire-place have been superseded by elegant stoves of various patterns for the purposes of cooking.

Pope, the great poet, Addison, Sir William Blackstone, and scores of others, are represented as wearing enormous wigs of hair, perhaps that of some of their former friends, or, perhaps, that of some favorite horse which they had ridden in the chase! Queen Elizabeth, in addition to her coronet of jewels, wore a profusion of hair, but for a purpose very far from that which impels the ladies of our day to vie with each other in loading the head with the cast-off hair of others, or with the grasses which imitate it. Then, the art of building and warming houses was scarcely worthy of the name.

Elizabeth's parlors, drawing-rooms and halls, had no vulgar mortar of sand and lime,

"To stop a hole and keep the wind away,"

but were covered with tapestry, in some cases highly embroidered with silk and gold, and in others with less rich materials. But all this did not "keep the wind away," and so Pope wore his huge cap, and Sir William and Addison their enormous wigs. Now, however, with plastered walls, a small furnace or steamer, or an air-tight stove properly arranged, the whole house is warmed, and woolen caps and horse-hair wigs are entirely unnecessary. But still, the women wear the borrowed hair, "When they will, they will, and that's the end on't."

So in medicine, in surgery, and all the range of the arts, we have gone far away from the habits and modes of life of our ancestors; and by this departure have added innumerable comforts and length of days to our existence. They tend, also, to educate, civilize and exalt us, and properly received and used, will gradually raise us into a higher scale of being.

Now, in addition to the numerous blessings flowing from the oil which has been so profusely poured from the bosom of the earth, we have another which assuages pain more than ether or chloroform, and still another, *carbolic acid*, of various merits, and which has suggested the foregoing remarks.

Let us see what is said of this wonderful substance, especially in matters which relate to the farmer.

Mr. GOODALE, Secretary of the *Maine State Board of Agriculture*, in his report for 1869, has a chapter upon "Phenol, or Carbolic Acid," which we have read with unusual interest. He says no feature of the remarkable age in which we live is more noticeable than the wonderful discoveries of science, and their application to useful ends. He quotes from a lecture delivered by Dr. F. G. Calvert, before the "Society for the Encouragement of National Industry," in France, in which the Doctor says "carbolic acid exercises a most powerful destructive action upon the microscopic and primitive sources of life, and is, therefore, an antiseptic and disinfectant much more active and much more rational than those generally in use."

Carbolic acid was used with marked success in England, Belgium and Holland, during the prevalence of cholera and cattle plague. Mr. W. Croakes states that he has not met with a single instance in which the plague has spread on a farm where the acid had been freely used; Dr. Ellis says, "I have, in many instances, allowed whole families to return to cottages in

which persons had died from cholera, after having the cottages well washed and cleaned with carbolic acid, and in no case were any persons attacked with the disease.

Prof. Chandelon stated, that out of 135 nurses employed upon cholera patients—where two thousand patients died—only one nurse died, but they were washed over, and their clothes sprinkled with carbolic acid.

It has, also, a wonderful efficacy in most of the painful diseases to which flesh is heir. But it is to its uses on the farm that we intended to call the attention of the reader.

Mr. Goodale says it is safe to assert that for lice, ticks, and other vermin infesting domestic animals, and for their cutaneous diseases, sores, ulcers, and the like, its equal for safety and efficiency has not before been found. Its applications and uses in a sanitary point of view are more important and numerous than those of any other known substance whatever.

The purest carbolic acid requires about twenty times its weight of water to dissolve it. When thus made a *much further dilution* will be needed for most purposes. Mr. Goodale found a weak solution effective in immediately arresting mildew on grape vines and on other plants; it also destroyed plant lice.

It is also adapted to many other purposes, one of which is as soap, prepared as follows: slice a quantity of bar soap, set it over the fire in a suitable vessel, after having added first water enough to liquify it by stirring and warming to less than boiling heat, then take it off and mix thoroughly for each pound of soap employed, from a quarter of an ounce to a whole ounce of carbolic acid, according as it is desired to have it mild or strong. When cool, the soap may be cut into cakes and laid by for use.

This recipe we find in Mr. Goodale's report, and along with it he handed us several cakes of soap, made up of different degrees of strength. This soap has been in constant use for washing the hands for three months, and has a cleansing power that we have not found in any other soap.

—To make a white wash that will not rub off, the Boston *Journal of Chemistry* says mix up half a pailful of lime and water; take half a pint of flour and make a starch of it, and pour it into the white wash while hot. Stir it well and apply as usual.

For the New England Farmer.

SCIENCE AS APPLIED TO AGRICULTURE.

Our lands are "running out," and must be renovated. Animal manures are not the only fertilizers within our reach, although they contain all the elements that enter into the composition of plants in a highly organized condition. Certainly the earth and the atmosphere contain all these elements of vegetable life, requiring only composition and organization to make them available.

After animal manure, wood ashes is undoubtedly the greatest organization of vegetable food in combination; but neither solid nor liquid particles contain the life-giving power of vegetation, any more than of human organization. No plant is a living being, however organized, until God "breathes into it the breath of life," when it becomes a living plant. Composed of the same materials as man and beast, it becomes food for his growth and maturity. The composition and assimilation of these elements; the relations of the vegetable to the mineral kingdom; their organization and disorganization; the wonderful power and influence the atmosphere has upon all these relations, is the science of agriculture, and are principles in vegetable physiology which every tiller of the soil should carefully study and studiously observe.

Man or plant when excluded from the atmosphere becomes entirely destitute of all vital action—life. Out of this fact, as connected with agriculture, grows the grand principle of pulverizing the soil.

Experience here introduces another branch of science—*drainage*. Draw out from the subsoil the cold water, and pulverize the surface finely, and you have laid a permanent and lasting foundation for successful agriculture. This cold, acid water in the subsoil is injurious to vegetable life until it has been brought under the influence of the atmosphere. This pulverizing, draining, trenching the son is no new thing. It was taught and practiced in Rome two thousand years ago. When Professor Mapes was turning agriculture up side down with his theory of soil analyses, he was practicing "deep trenching" in his pear orchards, which led to a success that dazzled his own eyes and led a confiding community astray in the ways of a false theory.

In finely pulverized soils the air penetrates every particle, imparting carbonic acid, which dissolves and organizes crude minerals into life giving food, which is drawn by capillary attraction into every tissue of the growing plant, and is crystalized into vegetable leaf and woody fibre by light and heat. Water also contains carbonic acid, and this being a solvent of mineral substances, detaches and sets at liberty carbonates and phosphates that rise to the surface and produce vapors or dews, when coming in contact with the atmosphere,

imparting life and vigor to vegetation, holding the organized elements in a state of solution as food for the immediate and constant wants of the growing plant.

This process may go on for ages; for the earth, from centre to circumference, is one grand store-house of all the mineral and vegetable substances that enter into the formation of man, beast or plant.

The physiological condition of the earth is ever changing. The decomposition of one kind of tree or plant, prepares the soil for the growth and production of another, and in many instances one altogether dissimilar. Draining and pulverizing aerates the soil, deposits with and imparts to the growing plant such food as is required for its growth and maturity, all surplus atoms passing down to be held in store for other kinds of plants. Mineral substances are valuable as food for plants in proportion to the source from which they are derived, and the nature of their composition. The ammoniacal gases, passing through the soil, imparting life and vigor, are the legitimate source of fertility. There is but little doubt that all lands that ever were productive may be made so again, unless positive physical causes prevent.

Long experience and observation teaches us that there are other than animal manures to be used as fertilizers in the restoration of exhausted soils. Shade is a great fertilizer. Nature shades or mulches all her plants and trees to prevent too free or too sudden evaporation. Vegetation suffers from extreme heat, and brisk, drying winds, unless protected by some kind of mulch. In mountainous or highly elevated districts, at a distance from large bodies of water, all vegetation suffers from heat and frost. In such districts every intelligent man will see that science is compelled to apply different rules of practice in the cultivation of crops, than is required in districts under the influence of large bodies of water, with a humid atmosphere, which renders essential protection from extreme heat in summer and cold in winter Science, observation and experience, man's great teachers, direct us up to natural laws; and when we reset a proper proportion of our "worn out" fields to forests; mulch our fruit and ornamental trees, as nature directs; cultivate less acres and cultivate better; return the immense quantities of vegetable and mineral deposit to the hill sides whence it has been washed for ages, and mix with the more solid portions; drain, trench, pulverize and reunite and mingle these old friends and relatives of the soil; then we shall have fields that will groan with grain and smile with beauty. The forests will entice back the birds to sing us ten thousand sweet songs, and to devour myriads of insects that now destroy our fruits and vegetables; rural life will be invested with new charms and new pleasures, and we shall have no need to sigh for a "land where the sun has smiles and flowers perennial bloom."

Let the agricultural colleges do this by example. Appropriate the national fund to the purchase of land, and make a model farm instead of model buildings; instead of establishing professorships, laboratories with chemicals, teach young men to cultivate and beautify the earth and make home pleasant, happy, permanent, and then we may exclaim "science is come to our aid, and we are advancing in practical agriculture." L. L. Pierce.

East Jaffrey, N. H., 1870.

Remarks.—But, without the professors and the laboratories, how are the boys to learn all about the "carbonates," "phosphates," "acids," "composition," "assimilation," "minerals," "decomposition," &c., of which our correspondent has discoursed so ably and so well? True, "science, observation and experience—man's great teachers—direct us up to natural laws," but may not our upward progress be greatly facilitated by the guidance and direction of those who have been over the road before us, and by the aid of the facilities which they enjoyed in their journey?

CARBOLIC ACID.

This peculiar substance which is extracted from coal tar, has been unfortunate in its name, in the first place from its similarity to a very different thing, Carbonic Acid; and, in the second place from the fact that it is not sour, and has none of the qualities of an acid any way. As, however, it is coming into general use, we think the following facts in relation to its nature and effects, from an article by Prof. J. Darby, in the *American Grocer*, will help to a better understanding of this valuable material:—

Carbolic acid is prepared by treating what was called the light oils (benzines) from the distillation of coal with dilute alkalis and carefully distilling the products which are heavier than water, the alkali being previously neutralized by muriatic acid. It is seldom found pure, it having more or less of cresylic acid in it, and often other closely related bodies. Carbolic acid is a solid at ordinary temperature, melting at 106° Fahrenheit and soluble in twenty parts of water; is a powerful antiseptic and disinfectant, preventing putrefaction and fermentation. Its whole effect is due to its arresting change. It is simply a preservative. As an antiseptic, it prevents change in the materials. As a disinfectant, it accomplishes the result by the same means—that is, kills the spores, if malaria consists of such, or

arrests chemical change if malaria is a putrescing material. Carbolic acid is a powerful poison. Every one has known that creosote is poisonous, and carbolic acid is only a new name for an old, well-known material, only less crude. Creosote will do all that is claimed for carbolic acid.

It is an active poison, acting directly on the nervous system, and may cause death; indeed, death has ensued from its application to an aching tooth. In the Glasgow Royal Infirmary the records show that when dressings in amputations and compound fractures contained no carbolic acid, one case in four and a quarter died, with carbolic acid in the dressings, one in three died; showing that the use of carbolic acid was positively injurious. It coagulates the vital fluids of the body and of course stops vital action. In the hands of skilful physicians, carbolic acid is susceptible of important uses; but for family use it is no more appropriate than arsenic or corrosive sublimate.

Its application, when not very much diluted, produces effects very similar to that of burns, blistering the skin and producing a sore that can be cured by the treatment that would cure a burn. It is offered the public in all forms, as soaps, washes, salves and also as a medicine for various diseases, empirics taking advantage of its popularity to render it available for their profit. That it is for many purposes very useful, is not to be denied; but it is very evident that it should be used with caution and care. We have used these carbolic soaps upon our own hands and face, and carbolic acid for disinfecting purposes, and recommend it. Our article is not designed to deter any one from its use as a disinfecting agent, but to give people who use it the knowledge of its properties they ought to possess.

CANADA THISTLES.

I have been amused at the great amount of anxiety shown by some of your correspondents in regard to the extinction of the Canada thistle. I have worked at farming all my life, and am still on the young side, and I hold that any farmer that cannot extirpate Canada thistles is not worthy of the name. I have killed them in so many different ways that it would be tedious to specify them all. Good summer-fallowing in a dry season will kill them. On pea ground, immediately after the peas have been harvested, if the ground is dry and loose, plough the land two furrows deep, one plough following the other; then, as soon as ploughed, cultivate and harrow effectually, and continue doing so, at intervals of a few days, as long as the land remains in a fit state to work. Manure on the surface, plough again in spring, sow with spring wheat or barley, and seed with clover (ten or twelve pounds to the acre, if more all the better,) cut the first crop of clover about the end of June, and as soon as the second crop is a foot high, plough it under; cultivate and harrow as after the peas, and if properly tilled afterwards, you have done with Canada thistles on that piece of land.

I have bought and partially cleaned two of the worst farms with thistles I ever saw; and I do not want any better recommendation of a farm than that it is able to produce a Canada thistle four or five feet high and an inch in diameter at the root. Such land, when properly tilled, will produce the best of crops.—*Cor. Canada Farmer.*

EXTRACTS AND REPLIES.

CLAM AND OYSTER SHELLS.

Editors New England Farmer:—I do not question the good intentions of your correspondents, W. H. Y., Mr. Phineas Pratt and others, who are writing about the great fertilizing value of clam and oyster shells. However honest they may be, it is certain that they are confusing the minds of farmers, and thereby doing much injury to the interests of agriculture. Some months ago I stated in your journal that clam and oyster shells were not manurial agents; that they were composed of carbonate of lime, which is valueless.

This simple truth, which it would seem every intelligent New England farmer ought to understand, has caused this excessive literary activity among some of your patrons. The trouble with your correspondents is that they do not clearly understand the matters they are discussing. No one of your intelligent readers will expect me to make any formal reply to what has been written, as the views presented are too preposterous to be taken into serious consideration.

Mr. Pratt evidently regards *oyster shells*, and *bones*, of equal fertilizing value. He does not understand the difference between a *carbonate* and a *phosphate* of lime. He says, "where oyster shell beds are, *or* where *bone dust* is used, cabbages grow twenty years in succession," &c. He does not know the chemical difference between *hydrate* and *carbonate* of lime, or between oxide of calcium, (caustic lime) and carbonate. Again, he says, "New Jersey owes half its fertility to *burning their rocks* and liming their lands once in seven years." As a statement, this is very absurd. Lime rock and oyster shells are no longer *carbonate of lime* after being *burned*. The carbonic acid is driven off by heat, and oxide of calcium is formed. This is a different agent entirely. The remark that "lime is the great thing wanting to bring back the fertility of the soil," is not true, but it may be noted as showing that Mr. Pratt regards lime (oxide of calcium) and oyster shells (carbonate of lime) as identical. It is certain that Mr. P. is not an authority in matters of agriculture involving chemical principles.

W. H. Y. falls into the same errors, and fails to understand the views of the writers he quotes. Neither Liebig, Stockhardt, Johnston, Way, Boussingault, or other chemist of any repute, ever stated that clam and oyster shells are manurial agents. The quotations made from two or three of the above named writers, regarding the fertilizing value of *lime*, has no bearing whatever upon the question at issue.

Let it be understood by soil cultivators everywhere, once for all, that clam and oyster shells *are not manurial agents, in any proper sense;* that they should receive no consideration at their hand, as substances to be *bought* at any price. Writers

who endeavor to make agriculturist believe to the contrary are doing that which is detrimental to their interests. James R. Nichols.

150 *Congress St., Boston, June* 4, 1870.

WOOL FROM HALF BLOOD COTSWOLD.— MARKETING WASHED AND UNWASHED WOOL.

Enclosed, you will find a sample of my half blood Cotswolds. The one from which the sample was taken is an ewe, one year old this spring. She sheared eleven pounds and six ounces. There is some of this description of wool in this vicinity. Where shall we find a market for it, and at what price? Will some manufacturer of wool inform us, through the Farmer, why unwashed wool is not worth as much as washed, in proportion to what it will cleanse? In 1867 my sheep averaged six pounds washed wool; in 1868 they averaged six and three-fourths pounds unwashed, that shrunk from forty-seven to fifty per cent. in cleansing. In 1869 the same sheep averaged six pounds washed wool again. I received thirty-two cents per pound for unwashed and forty-two for washed; making $2.16 per head for unwashed, and $2.52 for washed. M. Dustin.

West Claremont, N. H., May 25, 1870.

Remarks.—The specimen received measures seven and a half inches, and with such beautiful material it is not strange that manufacturers can make woolen cloth that rivals silk and linen fabrics in fineness and beauty. Your statement of marketing wool illustrates the injustice of the one-third rule that buyers attempted to establish, and shows very clearly that wool, like butter, flour, beef, or mutton, ought to be sold by its merits or quality, and that dealers in wool, as well as in other commodities, ought to understand their business. Most of the large wool houses in the city buy all kinds of wool, or sell it on commission. We know nothing of the value of such wool as yours, in addition to what you can gather from our market reports. The price we suppose is regulated by the cost of the foreign wool, which has been somewhat reduced by the decline in price of gold.

We see by the last monthly report of the Revenue Department, that for the seven months ending Jan. 31, 1870, there were 29,397,098 pounds of wool imported into this country, to compare with 17,788,015 for the same time last year; the value being stated at $4,254,217 for the seven months for 1870, and $2,539,636 for 1869. During the same seven months, ending Jan. 31, 1870, the value of woolen cloth imported is stated at $21,174,242. These figures have an ugly look. Over twenty-five million dollars worth of foreign wool and woolens in seven months! Do these importations put money in *our* purse? Yet these importers demand a larger liberty and are working like good fellows to secure it.

MUCK—SPECIAL MANURES.

I am not an indifferent reader of your paper. It contains much that is valuable upon all subjects interesting to farmers, as well as other subjects that are now moving the great human mind. Permit me a word upon special manures. We small farmers must have something better adapted to our wants and the soil, something that will cost us no more than stable manure does. Much is said the papers about muck. Some praise it; others condemn it as worse than nothing. I believe there is a great deal of difference in muck. We have muck enough here in Marlow,—if it had vegetable life in it equal to some of the patent manures,—to manure the whole of New England. It is very different from the muck of the lower towns. What the difference is we want some one that knows to tell us. Is there not some way that this muck can be made into a quick manure without so much handling and overhauling? The man that will answer this for the farmers will be worthy of a monument as high as Mount Washington. Such manure ought not to cost more than $5 per cord, and it should have all the energy of half a ton of patent manure. We have bought twelve hundred pounds of Bradley's Phosphate, for which we have to pay 3½ cents per pound. Dear stuff at that price. We are using it with green manure, a spoonful to a hill with a shovelful of manure. We are going to try it by putting half a shovelful of muck mixed with lime, ashes and salt in the hill, then drop the corn, and at weeding time put on the phosphate. What think you?

Putnam Tyler.

Marlow, N. H., May 23, 1870.

Remarks.—You are just the man to determine the value of the Marlow muck, and to discover the best and easiest way of using it. Try small parcels in all ways you know or can think of, and hold fast to the best. Try it with "dear stuff" and cheap stuff; with much handling and little handling; dry it and use it to save all liquid manure at house and barn, cattle yard, sink spout and privy, and that monument may be raised to your memory. If your muck is a good absorbent it has at least one very valuable quality. The wise ones have glory enough in books and papers. You can teach them more than they can teach you about the use and value of muck. They "blow bubbles," why may not you? The portion of your letter which you will see we have omitted shows your ability to do so, though the editors, like men walking among eggs, have to be a little careful where they put their feet.

OUR GEORGIA LETTER.

I must acknowledge that I am slow and unfaithful; promising more than I can perform, ever thinking I will do better in the future; but always behind.

I have just been looking in your bound volume of the Monthly Farmer for 1867, at some of the articles on manure, of which I find more than 60 in that volume. While reading some of them I could not help thinking how much the farmers of this county would gain by reading good agricultural works, and thinking more on the subject, and making their own manures instead of buying the so-called fertilizers.

I do not know the precise amount that is paid out for agricultural publications in this county, but I suppose from $100 to $150 yearly; while there are paid from $100,000 to $150,000 for fertilizers. I have no doubt farmers will learn better before many years, but they are certainly paying dearly for their education. We have everything that is really necessary for the improvement of our lands, right around us, if only saved and properly prepared and applied, gypsum excepted; and that we should have if we had everything that is now purchased. This is the only thing that we do not have, and this it appears, we can

scarcely get; of course I mean that which is good. There is some here from south-western Virginia, but they have got to furnishing an article there that is worthless. We must have Nova Scotia plaster next year.

This is an excellent country, but still food and raiment are not found without some labor and care. We grow 200,000 bushels of wheat, and let nine-tenths of the straw rot wherever it is threshed, and buy hay, often not as good as wheat straw, at $40 per ton; and that too where we can make two or three tons of good clover hay per acre. But our people are soon going to learn better. There are a number of tolerably good farmers here now, and they will still increase. Farmers will raise less cotton and more wheat and clover; some now have 50 to 100 or 200 acres of clover, and from 200 to 400 of wheat.

We have earlier spring and summer here than you. We have had strawberries ever since April, but they are nearly gone now. These will be followed by berries and fruit till December. We have also peas, potatoes and other garden stuff. Our wheat harvest will be on in two weeks or less.

This section, although devastated, in 1864, beyond anything I can describe, by the armies, has more than regained its former prosperity. Cartersville was more than half burned; but to-day it has more than three times the population it had before it was burned. The whole country bears the appearance of thrift, prosperity and contentment. Crops of all kinds, though later than usual, look fine.

The Van Wert railroad is progressing toward Alabama, and another is in contemplation—an air line road—from here to Lynchburg, Va. More anon. J. H. R.

Cartersville, Bartow, formerly Cass Co., Georgia, May 25, 1870.

REMARKS.—The great increase in number and improvement in appearance of southern agricultural papers since the close of the war is evidence of the prosperity of the people. The *Southern Cultivator*, published at Athens, is an able farmer's paper and ought to have a larger circulation in Bartow county than our correspondent's figures indicate. We hope that "J. H. R." will not forget his promise of "more anon."

A SICK HEIFER.

I had a three-year-old heifer which gave milk last summer and last winter up to the first of February. She had been fed with meal to keep up her milk until that time, when, as I wished to dry her, the meal was discontinued. After which she fell away in flesh until about the time she began to make bag, when I again put on her feed, in order to get her into condition for another flow of milk. She gained rapidly in flesh, and her bag got to be large, and she had the appearance of being ready to come in, an event which I expected at any hour. All at once she refused her meal, and began to fall away in condition, and has continued to do so until now. This was about four weeks ago, and she is now quite poor and feeble. Her bag has all gone down, and she has no appearance of ever coming in. About a week since, however, her bag increased a good deal, but it has now all gone down again. She has been carefully watched, and I feel confident that she has made no attempt at calving. I have no doubt the calf is alive, but how long either cow or calf will live under such circumstances, remains to be seen.

I was brought up on a farm, and have been a farmer on my own hook for thirty-five years, but I never saw, or heard, or read of such a case as this. Can you or any authority which you can consult with in Boston inform me of any such cases or the proper remedy for a case of this kind.

I should state here that the mother of this cow died two months since with ulceration of the womb; this organ had eight ulcers four inches in diameter and four inches thick, making the organ sixteen inches long, eight inches wide and four inches thick. T. L. HART.

West Cornwall, Conn., 1870.

REMARKS.—We have never witnessed such a case as is described above, nor heard of one like it before, and are inclined to think that if no meal had been fed to the heifer, she would have done well enough. It is not improbable, however, that the cancerous affection of the mother may have descended to the offspring.

If any of our stock-raisers have knowledge in the matter they will confer a favor by communicating it to the FARMER.

CHICKENS CAN'T HATCH.

I have the full bred Leghorn fowls, have set four hens, but when their time is up they can't hatch them out, for the skin of the egg is so very thick the chick cannot break it. Can you give me any information what the difficulty is?

West Medway, Mass., 1870. JOSEPH BARBER.

REMARKS.—We do not think we can. Evidently there was something wrong somewhere in the process of incubation. Fowls that "steal their nests" usually have "good luck" in hatching, if not interfered with, and such nests are often on the ground. Possibly there was not sufficient moisture in your nests to effect the proper decomposition of the "skin" of the egg, and we would suggest the experiment of a nest on good clean soil with a slight covering of fine hay, straw, feathers, &c. Many fowls, you know, "feather their own nests." Some of our poultry conveniences and arrangements are too artificial. We consult our own tastes instead of those of the biddies. Their instincts and habits are not enough studied or consulted. Our improvements on nature are sometimes carried too far.

Possibly, too, the hen might have been unwell, either from disease or the effects of lice, and lacked the ordinary degree of animal heat, or remained off her nest too long.

"METHOD OF GETTING HAY."

All farmers are concerned in this subject, and are certainly under obligations to those who are willing to give their experience and advice. Statements, however, should be explicit, lest they should mislead others.

The article in your paper from Franklin, Mass., of June 4, is quite too vague in some respects. It tends to results so unlike the common experience of farmers in Essex county, that we need to know a good deal that "John" does not tell us. Thus, must not the grass be *dead ripe*, to be fit to go in in twenty-four hours, and consequently *hard and woody?* Other writers go strongly for cutting earlier than formerly. Now, if cut before fully ripe, can it be safely put in the day after cutting? Again, if the farmer has a hay-making crew of workmen, who mow only in the *afternoon*, how are they to be employed in the forenoon? Or how can the same men mow only in the afternoon,

when the hay cut on the previous day is to be put in during the afternoon? And again, if the grass is so ripe as to go in the second day, must it not also be a case where there is but very little of it, as nothing is said about *spreading swards*, simply directions for *turning*, an operation which in heavy grass, might be done without exposing much of the crop to the sun at all.

The saving of labor is certainly a thing much to be desired; but this mowing and getting in at the same time, viz., both in the afternoon, with nothing to do in the forenoon, is what some of us cannot understand.

The evidence offered by the writer to show that hay so made is good, also needs a little examination. "One man who has practiced it several years has his stock look well." He may or he may not give other and better keeping, as of roots and meal. We need to be informed on points like these; for if English hay can be cured generally by this short process without coming out smoky, nay, without danger of *spontaneous combustion*, it is something not agreeing with our experience in Essex county.

That grass is oftentimes allowed to get too ripe is common; but to avoid this, the only alternative is to cut early; and this again conflicts with the short process recommended by your correspondent "John." But should this fall under his eye, I hope he will enlighten us, for all are concerned in it who have hay to make. INQUIRER.

County of Essex, Mass., June 4, 1870.

DUSTY HAY.

Having had for two or three years an experience similar to that detailed by G. B. H. in Weekly Farmer of May 21, I will give the course I have pursued to avoid the difficulty. First, I put a coat of plastering, about one inch thick, on the floor, to keep the dampness from rising from the cellar; then set some 2x6 inch joist up edgewise on the plastering and covered with loose boards; then nailed some strips of boards two inches wide to the studding on the sides of the barn,—thus getting a six-inch space between the floors and four inches at the sides. Now, by cutting my hay while in bloom and making it as described by Asa G. Sheldon in Monthly Farmer, for 1867, page 417, and raking with any but an iron tooth rake, my hay is entirely free from dust or smoke.

North Providence, R. I., June 2, 1870. G. E.

Remarks.—As many who may see this article may not remember Mr. Sheldon's process, nor be able to refer to what he said, we may remark, that his rule, stated in brief, is to cut herdsgrass and redtop when in full blossom, and then give it the best attention and a drying sun for two days.

THE IRISH AND FARMING.

I have taken the Farmer for some time and find much, especially in the inquiries and replies, which are of great advantage to me. In the Farmer and in other papers that I read I see it stated that many of the old farmers are selling out to Irishmen, and the question is sometimes asked why it is so. I have worked out with farmers long enough to be able to give some reasons for it. In the old country agriculture, or at least land owning, is considered desirable and honorable, though but few laboring men can ever hope to buy and pay for land. There we had to support kings, queens, lords, dukes, earls, &c. For one, though I did not believe in more than one Lord, one faith, and one baptism, I could not help myself. But in this country as we earn the means, our first wish is to own land, and as soon as we can we buy a farm.

But here, as the Yankee boys grow up they want to get into a store, shop, factory, office, and dislike to work on the farm. They will not handle a spade or dungfork, because an Irishman does; and the Yankee girls will not put their hands in a washtub because Irish girls do. Thus both of them leave their parents in their old age, and get into some other business. I will not call them lazy, perhaps they go where they have to work harder than at home. But go they do, and the old people finding themselves deserted by their children, and not able to carry on the farm themselves, are obliged to offer their places for sale, and if none but the Irish are willing or able to buy, what in the name of common sense can they do but sell to Irishmen? Farming must not stop. All the wise presidents, governors, legislators, &c., of this country, as well as the born emperors, and lords and all such like of the old country, must be fed, and if somebody did not raise the food they would have to do it themselves, and thus come on a par with other poor folks. This would be a sad affair, and therefore the Irish buy the farms and carry them on.

My wife has looked over what I have written, and thinks there is some truth in it, but says it ought to be written in a more polite manner. From MICHAEL MCNERNEY.

Becket, Mass., June, 1870.

Remarks.—We agree with Mrs. McNerney that there is "some truth" in this letter,—we think there is a great deal that ought to be pondered by all,—but we do not see that it needs to be expressed in a more polite manner. Two things should be remembered. The country cannot prosper without farming; but farming may flourish without Yankee boys or girls. For agriculture, there is no substitute; but for the Yankee himself there are substitutes. The old farms may change owners, but they will still have occupants.

FOOT DISEASE IN CATTLE.

I have a cow that was taken lame in one fore foot about the 25th of April. I examined it very thoroughly and could find nothing, only it was swollen about the hoof and between the claws. I washed out the claws and foot with soapsuds and put on resin and grease, and let her run in the pasture where it was dry. In about a week after, it began to look mangy and crack just above the hoof, between the claws. Not knowing what better to do, I made a flax seed poultice and kept it on two days and then bathed it in wormwood, but as it grew worse I put on tar. The foot is still very much inflamed, with a deep spongy sore, that discharges but little. The cow had good care the last winter, and was fleshy when taken ill. I have also one two-year old heifer similarly affected, but only in the hind foot; and also three yearlings and a four-year old ox that has not been worked. They are all in good condition and are very nice animals, being grade Durhams. The cow was wintered separate from the yearlings and has not been with them. It appears that the disease originated in my herd, as there are no other cattle about here affected the same manner. Some of my cattle had a little meal and a few roots, but most of them nothing but good hay during the past winter. This spring after the frost came out of the ground in my barn yards, my cattle were kept in the barn, except when turned out for water twice a day.

I have seen cattle that had what was termed the Fouls, but think it different from the disorder above described. My pastures are not swampy, but dry, with a stream of living water running through them.

And now, Messrs. Editors, can you or some of the readers of the FARMER give me information as to what ails my stock, and what can be done to cure the disease? D. K. W.

Rockingham, Vt., June 7, 1870.

REMARKS.—A disease known as the Foot and Mouth Disorder has been quite prevalent and fatal in various parts of England for a year past. It is described by some as attacking the hoof first which gets sore, is licked by the animal, and thus the disease is communicated to the mouth. Others think the disease commences at the mouth, teats and foot at the same time. This dangerous disease is highly contagious. But from the account given of it, we think it is quite different from that described by our correspondent.

Mr. Allen recognizes two different forms of the Fouls in cattle, which he calls the *Soft* and the *Horny*. Dr. Dadd says the disease is analogous to foot rot in sheep, and is caused by a stoppage of the natural evacuations usually thrown off from the system through the vessels or outlets that exist between the cleft. The object of treatment is to restore the lost function. The part should be cleansed, relaxed, and warmed first by water and soap, then by a poultice, of half a pound of marsh mellows, bruised; a handful of powdered charcoal; a few ounces of powdered lobelia, and a teacupful of meal, with boiling water sufficient to soften the mass; or equal parts of powdered lobelia, slippery elm, and pond lily, bruised. Mix with boiling water and put in a bag and secure it above the fetlock. Give the animal a dose of half an ounce of sulphur, one ounce powdered sassafras bark, and two ounces of any part of the burdock plant, steeped in a quart of boiling water, strain and cool. Whenever any fungus excrescence makes its appearance, apply powdered bloodroot or burnt alum. If there is a fetid smell wash with a tablespoonful of salt, and a wine-glass of vinegar, in a quart of water.

In reply to an inquiry about a similar disease by a farmer who says that out of a dairy of thirty cows, one-half are affected, Prof. Law says, in the *New York Tribune*, that the disease is *Dry Gangrene*, and is caused by an excess of *Ergot* in the grasses and grains of last year. He says the feed must be changed, and sound hay, steamed straw, bran, shorts, roots, &c., used. He recommends poultices of bran or oil meal, and if there is any unpleasant smell add a few drops of carbolic acid. To each sick animal one ounce of powdered gentian should be given internally, each day.

Will the readers of the FARMER give our correspondent the benefit of their knowledge and experience with the disease which affects his stock.

FATTENING TURKEYS.

It is very easy to fatten turkeys where there is plenty of corn, but it often costs nearly as much as they are worth, where corn is scarce and high; and people are apt to think so much of their corn and feed so sparingly, their turkeys are just about as fat after they suppose they have got them ready for market as they were when they begun. I will give the best and cheapest mode, in my opinion, from my own experience; and if any of your readers have any better and any cheaper way, I would like to have them publish it in this paper, for the benefit of myself and many others who would like to know.

When I commence to feed my turkeys in the fall, about three or four weeks previous to killing them, I begin to feed them potatoes boiled and warm, two or three times a day. After I have fed them a few days, I begin to put in a little corn meal, and mix well together,—a little at first, and increasing in quantity as the turkeys grow fatter, always giving it to them warm, until they have all that they want to eat. I feed them in this way until they are fat.

The time that it will take to fatten them will vary according to the condition they are in when I begin, their age, &c. Early turkeys will fatten much easier and quicker than late ones, and will look better when dressed.

I think the value of potatoes and their fattening properties are not generally understood as they should be, either for poultry or pigs. I feed them to hens, turkeys and pigs with good success. I do not like the way of feeding potatoes raw or of boiling enough to last a week, and feed them cold as many people do, and then say that potatoes are good for nothing to feed. By taking a little pains I can get turkeys as fat by feeding in this way, as with corn, and much cheaper. If I have a large flock, and not a very good chance for them to glean harvested grain fields, I feed a few potatoes to them during the fall. A small flock will usually get their living in the fields till the first of November, after which they should be well fed.

A FARMER'S WIFE.

Hyde Park, Vt., June 3, 1870.

WINTERING BEES.

As you wish the experience of bee-keepers on wintering bees, I would say that for wintering on summer stands, the following is a cheap and safe way. Make a box without top or bottom, set it on over the hive, having a space of three or four inches around the hive, and about six inches higher than the hive after the cap is removed. Then fill in around with shavings or cheap hay, leaving a passage to correspond with the entrance into the hives, and lay a board over the top to keep out snow, rain and mice. Keep them shaded after the first of December, except about twice a month, when the temperature is 47° or higher, so that it will be safe for the bees to fly. My bees, wintered in this way, consumed but very little honey, and came out in fine condition, and swarmed as early as the 26th of May to the 4th of June.

For wintering a large number of hives a building like the following would be better: build a house eleven by twelve feet, and six feet six inches between floors, make the walls with ten inch space filled in with sawdust, clap boarded outside, and sealed inside. Have a double door in one end, with shutter and window in the other. The upper and lower floor to be covered with sawdust. Both upper and lower floor to be ventilated by a six inch stove pipe. The cap should be slightly raised, and the room kept dark and still. A. GREEN.

Amesbury, Mass., June 6, 1870.

FRUIT AND OTHER CROPS IN MICHIGAN.

This is one of the great fruit growing sections of the United States. For miles and miles it is a wilderness of fruit trees and vines and beds. The prospects are of a medium crop, but no surplus to be wasted, as was the case last year. The peach growers are making a vigorous fight with the cur-

cullo. Millions of the little pests are taken each day. I am surprised at the amount of care and labor successful fruit growers consider it necessary to give to their orchards. Five acres of fruit is as much as one man can attend to properly, and he will find work to do thirty weeks in a year and six days in a week, certainly. But if properly attended to, the returns are large; and if neglected, no returns; as inferior fruit here will scarcely pay for picking, when there is an abundance of first class offered at fair rates.

The wheat that was not winter killed is looking well; but it is too early yet to say with certainty what it will be. The farmers are beginning to look anxiously for rain. Wheat is $1.20 per bushel. Flour $7.00 per barrel, and potatoes have jumped the last week from thirty up to forty cents a bushel; the potato bug having attacked the new crop in great numbers and with evident disposition to make a clean sweep. They make no distinction and show no preference,—Early Rose or old varieties, it is all the same to them.

L. E. Bicknell.

Benton Harbor, Mich., May 30, 1870.

WHO SHOULD TAKE AN AGRICULTURAL PAPER.

Not the farmer alone, though to him it is, of course, one of the essentials of life; a wise counsellor, a friend in need, a safe and healthful fireside companion. But it should have a wider range of usefulness. Every one who owns a garden, even if it be but a "window garden," has an interest in its teachings, and would derive pleasure and profit from them. A good and high-toned agricultural journal exerts a pure and ennobling influence wherever it goes; and it should carry that influence into cities and villages, as well as among the farming community. To those who have scarcely an opportunity of seeing the rich fields, the gay meadows, and the dark forests, from one year to another, it would bring a breath of pure country air, as refreshing as the cool breeze of heaven in a crowded overheated hall. To many it would be a pleasant reminder of the past; of the happy childhood spent in some far off country home, and now remembered as the brightest portion of a busy life. It would lighten the weary hours of the invalid, while the convalescent would find its Domestic Receipts and Market Reports especially interesting.

If half the money that is wasted upon story papers were turned into this purer channel, what a renovation in morals there would be throughout the land; how much less of extravagance and dissipation, of vice and sorrow; how much more of peace and temperance, of health and happiness.

Marlboro', Mass., June, 1870. Mattie.

CABBAGE WORMS.

About a year ago I wrote you in reference to a cabbage worm which had destroyed the cabbages in this section.

The inquiry in Mr. Scudder's note on "Cabbage Worms," (Monthly Farmer, 1869, page 362,) as to "whether I know or only thought the butterfly to be the parent of the worm," led me to pay considerable attention to them during the past year. I was well satisfied then that the worm was the offspring of the butterfly; but to be more certain, I confined a butterfly in a box with some cabbage leaves. She laid her eggs, and in a short time the worms made their appearance. The cabbages in this section were entirely destroyed by the worms last year,—nothing remaining but the bare stumps. The turnips were also badly damaged, apparently by the same species of worms. I could not distinguish any difference between the butterflies on the turnips and those on the cabbages. The butterflies commenced to lay their eggs about the first of June, and continued until the last of August.

Last August I confined several cabbage worms under a glass, with plenty of air and cabbage leaves. In about a week they fastened themselves to the top of the glass and gradually turned into a chrysalis state, where they remained until about the first of May, when they burst the shell and revealed a yellowish white butterfly with black spots on the wings. The under edge of the clapboards of a building, standing near my cabbage patch, was completely covered last fall with the worms in a chrysalis state. We have not as yet discovered anything that will destroy the worms and not injure the cabbage, except picking them off by hand, which is not very desirable.

Mr. Scudder, in the note above referred to, says, "the butterflies are of feeble flight, and easily taken in a scoop net," and recommends that as the "easiest way to destroy them." In this, Mr. Scudder is very much mistaken, as our butterflies are quite active, and it would be a difficult job to catch them in a scoop net.

On account of the ravages of these worms, very few cabbages will be set out here this season. If any of the readers of the Farmer know of a remedy to destroy the worms, they will confer a great favor on the lovers of sour crout in this vicinity, by sending it to us through the columns of the New England Farmer. H. L. Sowles.

Alburgh, Vt., May 30, 1870.

SIGHT RESTORED BY SALTS AND CIDER.

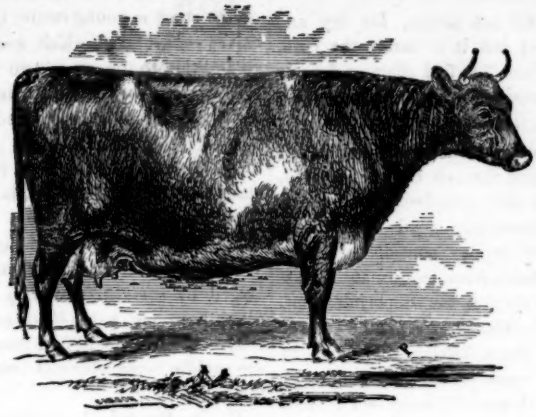
Some eight or nine years ago, Mrs. David Batchelder of North Reading, Mass., now 80 years old, gradually lost her sight, and finally became blind. About a year ago, being somewhat out of health, she was advised to take Epsom salts dissolved in cider to cleanse her blood. She had about a tablespoonful of salts dissolved in a pint of old hard cider, and took a wine glass full each morning. She took it in this manner about three weeks, then left off two weeks, and then began again, continuing about the same length of time, and leaving off again for two or three weeks, until she had taken half a pound of salts. About this time she began to discern bright colors, which encouraged her to continue the salts and cider at intervals to the present time. She continues to improve in sight and general health, but cannot as yet see quite as well as formerly. Knowing that others have been afflicted much in the same way as Mrs. B., and the remedy being so simple, I send you this for the benefit of the community.

Reading, May 23, 1870. A. G.

MUSTY AND IMPERFECTLY CURED HAY.

We read the injunction to provoke one another to good works, and I was almost thus affected by reading an article in a late Farmer from one who wished to know what caused his hay to be smoky. I never have any trouble with smoky hay when rightly cured and housed. But I am one of those old fogy farmers who have but little faith in housing hay half made. This putting in the barn heavy burdens of clover hay the day it is cut is something I can never do without having smoky hay. That we may dry hay too much I am fully satisfied, but believe that where one farmer dries too much, ten dry too little. I see it stated by some writers that it is best to house heavy clover hay after just a little wilted and pack it down solid in the mow. For one I believe that if I should fill my barn thus, I should have the next spring a good supply of manure without putting the stock to the trouble of chewing the hay.

Bedford, N. H., June, 1870. T. G. Holbrook.



AYRSHIRE COW.

On copying the above illustration of a modern Ayrshire cow, from Mr. Allen's book on American Cattle, we do not propose to give a detailed history of this well known breed of cattle. Mr. Rankin, an English breeder, claims that the Ayrshires unite, perhaps, to a greater degree than any other breed, the supposed incompatible properties of yielding a great deal of both milk and beef.

Mr. Aiton, another English authority gives the following description of the Ayrshire cattle.

"*Head* small, but rather long and narrow at the muzzle; the *eye* small, but smart and lively; the *horns* small, clear, crooked, and their roots at considerable distance from each other; *neck* long and slender, tapering towards the head, with no loose skin below; *shoulders* thin; *fore-quarters* light; *hind-quarters* large; *back* straight, broad behind, the joints rather loose and open; *carcass* deep, and *pelvis* capacious, and wide over the *hips*, with round fleshy *buttocks*. *Tail* long and small; *legs* small and short, with firm *joints*; *udder* capacious, broad and square, stretching forward, and neither fleshy, low hung, nor loose; the *milk veins* large and prominent; *teats* short, all pointing outwards, and at considerable distance from each other; *skin* thin and loose; *hair* soft and woolly. The *head*, *bones*, *horns*, and all parts of *least value*, small; and the general *figure* compact and well proportioned."

PROSPECTS OF THE CROPS.

In a ride of about sixty miles by horse power through a portion of Middlesex and Essex counties, we have had opportunity to notice the condition of the crops, and of conversing with many farmers in relation to them.

We have no recollection of ever seeing the grass crop more promising in the second week in June than it is now, June 9. The clover is exceedingly luxuriant, and some portion of it so stout as to be beaten down by the gentle rain of the sixth instant. This will require cutting at once, though not more than a fourth of it is in bloom.

The cereal grains and Indian corn look finely. They came quick and well and are very promising.

All the early garden stuff seems to have come well. Some peas were in bloom; potatoes, beans and the garden vegetables generally were looking finely.

There is promise of an abundant apple crop. Though millions of the young fruit have fallen, other millions remain; enough to afford a crop beyond anything we have had for several years, if no attack by blight or insects is made upon them hereafter.

In some localities the canker worm has entirely destroyed the foliage, and in others only partially so; but the injury is not general in any locality.

Pears, cherries and peaches looked well wherever we noticed their trees.

It is early, we are aware, for dry and scanty pasturage; but it is rarely the case, even in "leafy June," to find them so densely clothed with luxuriant grasses, and gemmed with white clover blossoms.

The stock on every farm visited was in fine condition. It came through the winter well, and passing into such excellent pasturage is presenting a remarkably good appearance. The finest we saw, in any considerable number, was at the State Alms House, at Tewksbury, under the care of the Superintendent, Capt. Thomas J. Marsh. When he entered upon his duties there, twelve years ago, he found but three cows on the farm, although the milk bills were annually some two to three thousand dollars! It was several years before he could induce the inspectors to allow him to enlarge the number of cows. They urged that all the hay and grain they consumed must be purchased, and that therefore, the milk would cost more than to buy it as they had done. It was true that the farm—of a hundred or more acres—did not produce enough to furnish the hay and grain required to keep these cows and the two or three horses whose services were needed in the business of the institution.

Now, Capt. Marsh has upon the farm sixty-nine head of neat cattle, or had at the close of winter; some of the young stock being away at pasture. Most of these he has raised on the farm, and now cuts a large portion of the hay from it, upon which the stock has been fed. Among the stock are six working oxen, each animal of about eight feet girth. These were purchased, but he has two pairs of exceedingly promising steers coming on. At milking time we saw twenty-four cows in the leanto, as fine-looking as we ever saw, and whose products were all that ought to be expected of any cows. They were scrupulously clean and docile, and of mixed breeds generally. There were four bulls, one a pure Short-horn, judged to weigh 2100 pounds, a pair of two-year olds and a yearling. The Short-horn had a strong and easy-fitting harness and was worked daily, alone or before a pair of oxen. The younger ones were also moderately worked, headed by the pure Jersey yearling. By this usage they were all gentle and good-tempered, and were found profitable workers in the field. The remaining portion of the stock is young cattle, but not including calves,—several of which were in the stalls. In addition to the oxen, two or three horses are required for the farm, and as many more for the different vehicles needed in the business of the institution.

The hay for all this stock, if we understood statements made correctly, is now cut on this farm, on which, twelve years ago, there was not hay enough raised to supply three cows. Within a year or two the farm has been enlarged by some fifty or sixty acres, but these acres have not yet added much to the hay crop. They are still in a transition state, but are rapidly being changed into beautiful and fertile fields.

Passing through the kitchen we saw *three* large wash tubs filled with soaking peas, and as many tubs of corned beef to make a part of the pea soup for the next day's dinner.

When the inmates are to enjoy cabbage for dinner, it requires a *large ox-cart full of heads*, after the outside leaves are taken off, to supply the plates of those who are not in the hospital! Between *four and five thousand bushels* of potatoes are annually required for the family. Five barrels of flour are kneaded up at once for baking, two or three hundred pounds of codfish for a single dinner, and other things in proportion throughout the whole cuisine department.

The most perfect cleanliness and order were apparent everywhere, inside and out. The drainage and sewerage excellent, and generally the ventilation of the buildings; but in this particular some changes are needed and of such a character as to be wholly independent of the inmates. Persons who do not understand the importance of breathing pure air, are quite apt to close all doors and windows and run the risk of suffocation. Ventilation, therefore, should not depend upon opening and shutting doors or windows. It is somewhat doubtful which would kill the quickest, impure air or fresh currents rushing in on certain portions of the body when not in exercise. We think we should rather take our chance in the carbonic acid.

When the fact is considered that the farm improvements to which we have alluded, have been made at the same time that a family of

from *three to twelve hundred persons* have been cared for, and well cared for, it will be conceded, we think, that no better evidences of agricultural skill have ever been presented to the farmers of the State, that in the management of this originally wretchedly poor farm.

Twelve years ago, three cows could not be fed from it; now seventy five head of stock are fed from the hay cut, several thousand bushels of roots harvested, cabbages by thousands of heads, and potatoes by thousands of bushels, and, every day, forty pounds of the most delicious butter are made.

It is true, that Capt. Marsh has unusual facilities in the use of fertilizers and labor, but in the hands of many persons, these would only increase the bills of cost to get rid of them. A large amount of the labor comes from persons who are incompetent to direct themselves, and must be constantly guarded and directed by others. And yet, this labor, trifling as it is individually, is sufficient in the aggregate to produce such excellent results.

BEET SUGAR MANUFACTURE.

The expectations which were excited several years since by the purchase at Chatsworth, Ill., of some 2400 acres of rich land, and the establishment there of a costly factory, to be operated by experienced men from Germany, have not been realized thus far. On the contrary we have had reports of disappointment and partial failure, which have been disheartening to those who had hoped that this establishment would demonstrate not only the possibility, but the profitableness of producing at least a portion of the large amount of sugar consumed in this country.

A writer in the New York *Tribune*, who has visited Chatsworth, and examined the premises of the Company, thinks that that section does not possess all the vital conditions of success. The soil is a strong black clay loam, exceedingly rich in humus and the nitrates, especially adapted to corn, oats and grass, but having too great an excess of salts, for sugar beet culture, until, by grain growing, these have been somewhat reduced. The soil is inclined to wash and run together, under the action of water and frost; while "one requirement for success in sugar-beet culture is a thoroughly drained soil, that can be worked at all seasons within twenty-four hours after the heaviest rains, and which shall be sufficiently sandy, so that it will not crust nor bake, but easily disintegrate in cultivation. Another necessity is plenty of sweet soft water, accessible to the sugar factory for use in both cleaning and steam power. Now these particulars, *absolutely essential* to successful and profitable beet culture and sugar manufacture, do not exist at Chatsworth, in a state of nature, but at great expense are being gained by artificial means. The experiment at this point is an exact parallel of one in Germany, where nearly all the natural conditions were the same, and where the capital of three successive companies were sunk before it was made a success; but which we may say, for the comfort of the stockholders at Chatsworth, is now one of the best paying companies in Germany."

A "black-sand" soil, like that of the Rock and Fox River bottoms, of Alton and Villa Ridge, Ill., also along Winnebago Lake, at Fond Du Lac and other points in Wisconsin, is considered more favorable than the prairies for beet growing.

Speaking of the last year's operations, in cultivating beets at Chatsworth, this writer says, their lack of complete success can in no way be attributed to mismanagement. The seven weeks of uninterrupted rain in May and June washed off or rotted away all but 100 acres of the beet plants. The succeeding drought and early frost left them from this but 300 tuns of beets for their toil. Yet with all these disadvantages beets were placed in the mill at a cost of $4.50 the tun—10 per cent. lower than the lowest estimate for this result by the German manufacturers. This was effected in part at least by newly invented machinery. The indications for the present season are regarded as favorable. Three hundred and thirty acres of beets, 150 of grass, 140 of wheat, 150 of rye, 400 of oats, 1100 of corn, &c, are now under cultivation, and all looking well. The writer anticipates for Chatsworth a good measure of success this season, and believes it is now in hands in all departments competent to realize the wishes of its friends, and those of this industry generally, as to its success both financially and otherwise.

CURCULIO TRAPS OF MICHIGAN.

The Horticultural Editor of the *Prairie Farmer* has visited St. Joseph, Mich., and examined the new plan of destroying the curculio, of which we gave some account last week. While he advises cultivators to try the traps, he is less sanguine of their efficiency than are the people of St. Joseph. During cold nights the curculios descend for a more comfortable lodging, but when the weather becomes warm enough to swell the fruit sufficiently large for their operations, he says they do not descend, but remain all night in the tree. From this time there are not less than thirty days, during which they fly freely, and migrate from one orchard to another. Indeed, fruit was found to be stung on trees that had been most carefully trapped, and on resorting to the old jarring process many more insects were caught on the sheets than had been under the traps. While, therefore, the new process may lighten the labor of jarring, it appears that it cannot be relied upon as an exterminator.

Prof. Riley, of the *American Entomologist*, agrees

with the views expressed by the *Prairie Farmer*, and also shows by an extract of a letter from a Mrs. Weir, published Jan. 28, 1865, in the *Rural New Yorker*, detailing her success in capturing the insects under boards laid on the ground for that purpose, that the invention is not a new one.

NEW PUBLICATIONS.

MEMORIAL of Benjamin P. Johnson, read before the New York State Agricultural Society at the Annual Meeting, Feb. 10, 1870, by Marsena R. Patrick, Ex-President of the Society.

Throughout the country there is a general complaint of the want of hearty co-operation by the tillers of the soil with the leaders of agricultural progress. Books printed at great public expense for the benefit of farmers gravitate to the rag-bag and junk store. State Boards of Agriculture hold sessions in rural districts, but even there they do not reach the rural people. State Societies hold shows and fairs, but the attendance of the "intelligent yeomanry" is secured by almost any device that will "draw." "Great names" are placed on the agricultural stump, but they fail to attract the masses. Why should these eloquent speakers, these attractive exhibitions, these learned discussions, these elaborate Transactions be so poorly appreciated?

One reason for all this is suggested to our mind by the perusal of this Memorial, and that is the want of sympathy between these men and those whom they wish to reach and influence. Though written in the ordinary eulogistic style of such compositions, this Memorial sketch of Mr. Johnson's life, presents the following facts. Until fifty-three years of age, he was a lawyer, politician and office holder. In the language of his eulogist, he was "so generous in his feelings" that "it is not to be wondered at that he was never a successful financier, or manager of his own money matters, or that he became gradually, and almost insensibly embarrassed in his pecuniary affairs, until he suddenly found himself wholly unable to meet his engagements." In May, 1846, he departed abruptly for Europe, and left his "financial unpleasantness" to the care of his friends, by whom, we are informed, it was "satisfactorily arranged," and Mr. Johnson returned to his native land, in November of the same year, when the same good friends secured for him the snug little position of Secretary of the New York State Agricultural Society. Once in this office, he was retained twenty-two years,—though later in life a "lethargy was stealing over him" that incapacitated him for the discharge of its duties,—because, and we again quote both the sentiment and the language of the Memorial, "To have dropped him from the rolls of the Society, as its Secretary, would have been to pronounce his sentence of death."

We can honor these charitable feelings for a needy incumbent, though we may not approve of the form in which they were expressed in this case by the managers of the Society. We believe that the State has suffered greatly from the inefficient manner in which the Transactions of its Agricultural Society have been edited for many years past, and that in this way something has been done to foster that indifference on the part of farmers so generally deplored.

TRANSACTIONS of the Vermont Dairyman's Association, 1869-70, with Addresses and Essays Original and Selected. Published by the Secretary, O. Bliss, Esq., Georgia, Vt. 1870.

This pamphlet of 120 pages give us the addresses of Hon. E. D. Mason, President of the Association; of Hon. Henry Lane, on the cultivation of Beets; of Hon. X. A. Willard, on Dairying; of Dr. M. Goldsmith, on Experiments in Dairying; of Hon. T. G. Alvord, on Salt; of Hon. R. Goodman, on Grasses; of Prof. G. C. Caldwell, on Fermentation and Putrefaction; of Prof. A. N. Prentiss on Ergot; of O. S. Bliss, Esq., on Butter Making; together with List of Officers, &c. These are valuable papers, and will be read with interest and profit by farmers. In his introductory remarks, the Secretary says, that the afternoon of the second day's session "was devoted wholly to discussions." And from our experience with similar meetings we can readily credit his subsequent remark that "the time was fully occupied, affording new evidence that one of the most valuable features of such meetings is the extemporaneous discussions among the members themselves." Yet we find no trace of this "most valuable feature" in the printed transactions of the society.

On the same page, the Secretary says:—"It is a source of regret that no more of the practical dairymen of the State were in attendance upon the meeting."

But why was there not a more general attendance of the practical dairymen of the State at the St. Albans meeting? There can be no question of the fact that a large number of the farmers of Vermont are deeply interested in dairying. They buy liberally and read carefully books and papers that relate to this and other branches of farming. They are always ready and glad of an opportunity to talk upon these subjects. But when a meeting is called at which men of note and distinction are invited to discourse upon these same topics, they somehow seem indifferent about attending, or if they are present they take a back seat, and act for all the world as though the meeting belonged to somebody else, and as though they were not at home there.

This is as true of the farmers of other States as of those of Vermont. The Convention in St. Albans is not the only one that has had cause to complain of empty seats. But what shall be done to fill them in the future? is a question that we do not propose to answer affirmatively here; though we cannot refrain from suggesting, negatively, that, whenever the extemporaneous discussions of the practical men present at any of these meetings prove the most valuable feature of the exercises, their entire omission from the printed journal of

proceedings, will not be likely to fill these seats, or to encourage their occupants to take a more active part in the proceedings at another meeting.

But this does not impair the value of the papers which constitute the bulk of the Transactions of the Vermont Dairymen's Association, which we commend to the attention of dairymen in Vermont and elsewhere.

PEACH CULTURE. By James Alexander Fulton, Dover, Del. Illustrated. New York: O. Judd & Co. Boston: A. Williams & Co. 1870. 190 pages. Price $1.50.

This book gives directions for raising trees, planting and cultivating orchards, gathering and marketing fruit, with suggestions on varieties, &c. The author lives in the centre of the peach growing districts, where orchards of twenty to fifty acres are common, and in which individual planters have as many as six hundred acres. He ought, therefore, to be able to give the results of a large experience in this branch of fruit culture; and his effort has been, he informs us, to make a handbook and guide to every planter, that may be used as the student uses his dictionary in the acquisition of a language. Whatever may be the respectability of men engaged in other branches of farming, he says "most of our large peach growers are gentlemen of wealth, refinement, and leisure; many of great social, and some of high official position."

CINCINNATI INDUSTRIAL EXPOSITION.—We have received a circular from the committee of arrangements for a Grand Industrial Exposition of Manufactures, Products and Arts, at Cincinnati, Ohio, by the Chamber of Commerce, Board of Trade and Ohio Mechanics' Institute, to commence Sept. 21, and continue until Oct. 15, 1870. Articles for exhibition will be received from the 1st to the 20th of September. Circulars containing full and specific information relating to the Exposition may be obtained by addressing "Cincinnati Industrial Exposition," Cincinnati, Ohio. Charles F. Wilstach, President; Abner L. Frazer, Secretary.

PROFIT IN FEEDING STOCK.—There is a general impression at the East that fattening cattle and hogs at the West is very profitable business. An Ohio feeder states as the result of experiment, that beef at 6½c and pork at 9c per pound live weight, gave him 55½c per bushel for corn. An Illinois farmer says that in his section they cannot afford to feed corn after the price has reached 50 cents. A farmer in Central Illinois who is a prudent, careful, and economical man, shows by his books that he does not get fair pay for his labor when he sells good cattle at 8c per pound live weight.

CHEESE FACTORIES IN ENGLAND.—The first establishment in England, was started in Derbyshire, but a few months since, under the superintendence of an American, with the milk of 300 cows. At first, farmers were very doubtful as to the success of the Yankee notion, but in three months there has been so great a change in public opinion that the company has been obliged to refuse offers of milk supply from 500 additional cows. A second factory is to be opened immediately at Longford, nine miles from Derby, and it is believed that it would not be difficult to start six factories within ten miles of Derby.

AGRICULTURAL ITEMS.

—One thousand cows every day contribute their milk to supply the cheese factory in Hinesburgh, Vermont.

—In speaking of raising corn on "clay lands" in Georgia, a correspondent of the *Southern Cultivator* estimates the average crop, including good and bad years, at ten bushels an acre.

—Figs grow very abundantly in South California. They ripen twice a year, and compete, when dried and packed, with the foreign imported ones in the home fruit market.

—Canker worms are stripping orchards very badly in many parts of Massachusetts, while in some places where they have heretofore been most destructive, there are not as many this year as usual.

—Wm. F. Barber of Castleton, Vt., lately sheared 70 Merino sheep, all ewes, with an aggregate of 1,025¼ pounds, giving an average fleece of 13⅛ pounds to each. The sheep were all raised by Mr. Barber, and the growth of the fleece is a year, less one day.

—A statement of the hogs sold by the farmers of Neponset, Ill., from Nov. 1, 1869, to March 15, 1870, is published in the *Prairie Farmer*. The whole number is 8300, making 2,905,000 pounds of pork, averaging 350 pounds. A list of eighteen farmers is given who sold 932 hogs, that weighed from 400 to 556 pounds each.

—J. H. Crook & Son, of Pittsfield, have just purchased five Short-horns in Xenia, Ohio, from the strain long famous in that State and Kentucky for beef. They are Kitty Clover 2d, a four year old cow; Kitty Clover 3d, one year old heifer; Kitty Clover 4th, a calf five months old, and Country Gentleman, a bull six months old. Their farm contains 280 acres. They are believers in thorough drainage and have underdrained five acres with good results, one acre of which is now worth more than the whole five were before it was drained.

—The Lawrence, Kansas, *Journal*, says Alfred Gray, a somewhat noted fruitist of Wyandotte, undertook, a while since, to console some friends whose orchards had been nipped by the frost. In one of his orchards he built fires to preserve the fruit blossoms, and not a bud was injured. This produced the usual "See there, now," of his auditors, when he coolly added, "I had two or three more orchards in which no fires were built, and not a single bud was injured in them either!"

ON PRUNING.

The best season for pruning apple trees is now near at hand. Trees which have been properly managed during their whole growth, will never need the cutting away of large limbs, unless they have been injured by teams, or broken by snow or wind.

What are called "suckers," may be thrown out, more or less, every year; they are often cut out when the sap is in full motion, and where they have stood thickly, the branches from whence they were taken have become black and diseased. It is better to take away even these small shoots at a proper season.

All fruit trees growing as common standards, should be allowed to assume their natural form, the pruner going no further than to take out all weak and crowded branches.

Some persons go into the centre of a tree and cut away quite large limbs, when the desired object could be much better gained by thinning out their extremities. It is always better not to cut a large branch, unless it is actually endangering the tree considerably. Taking off large limbs tends to throwing out suckers the following summer. All these should be rubbed off when they first appear.

When pruning,—Mr. Downing says,—is not required to renovate the vigor of an enfeebled tree, or to regulate its shape, it may be considered worse than useless. Bearing in mind that growth is always corresponding to the action of the leaves and branches, if these are in due proportion, and in perfect health, the knife will always be found rather detrimental than beneficial.

But the injury arising from pruning apple trees, is infinitely greater from doing work at the *wrong time of the year*, than from injudicious cutting. Our object is now, mainly, to present some authorities on this point.

Prof. Lindley says, "If well directed, pruning is one of the most useful, and, if ill-directed, it is one of the most mischievous, operations that can take place upon a plant. The season for pruning is usually midwinter, or at *midsummer*. It is, however, the practice to perform what is called the winter pruning *early in the autumn*."

Mr. Downing. "We should especially avoid pruning at that period in spring when the buds are swelling, and the sap is in full flow, as the loss of sap by bleeding is very injurious to most trees, and in some, brings on a serious and incurable canker in the limbs. * * * Our experience has led us to believe that, practically, *a fortnight before midsummer is by far the best season, on the whole, for pruning in the Northern and Middle States.* Wounds made at this season heal over freely and rapidly."

"The best time for a general pruning is at the close of the first growth of summer, 15th of June to 15th of July."—*Am. Agriculturist.*

"In the spring, the tree in all its parts, is filled with sap, and the wood at the wound cannot season. Hence it readily decays. Any person who should cut timber at this season, and expect it would season with the bark on, would be considered out of his senses."—M. B. Sears, in *Maine Farmer.*

"*June* is the time to prune fruit trees. Limbs taken off at this season, will begin immediately to send out a ring of new wood, just where it is needed, and will thereby protect itself in the soonest possible period from external harm." So states E. D. Wight, in the *Genesee Farmer.*

A writer in *The Culturist*, says from the middle of June to the first of September is claimed to be the proper time in which to perform this important operation.

We do not know who claims this, but are quite confident that it is postponing the proper time too long. Avoid pruning when the sap is in full flow, and the tree will not be injured when the work is properly done.

Most persons have observed that trees show, in August and the early part of September, what is called a *new growth*. On this growth the color of the foliage is a lighter green, and has, every way, the appearance of being more recent than that of the rest of the tree. And so it is.

By the time that midsummer comes, most of the sap that flowed up in the spring has gone to the branches and aided in expanding buds and blossoms, and in sending out new leaves and extending the twigs. When the tree has done this, the superabundant sap returns down the tree through the bark and increases its diameter.

The tree has now a season of rest. The sap vessels are comparatively empty, so that if

its branches are cut, the wound will rarely bleed. The returning sap, we suppose, soon forms a green, healthy ring about the cut, in the bark, and the remainder of the cut dries and shrinks before the sap is again in motion. This season of rest, then, of three or more weeks, is the best time to prune. It has its inconveniences, we are aware, but they are of less consequence than the injury of the tree.

No harm comes to the tree, we believe, if pruned in the autumn, soon after the leaves have fallen. The tree is then, also, in a comparative state of rest and may be cut judiciously without injuring it.

For the New England Farmer.

DRAINAGE IN ENGLAND.

As the climate and some other circumstances that affect the farmer are different in this country from those of England, and as many Americans are prejudiced and set against British or Scotch modes of farming, I feel somewhat reluctant in commending any of their practices. But having had considerable to do with draining land in England myself, and having seen much of the operations of others there in the same line, I beg to give a few instances to illustrate the mode adopted there, the material used and the effect produced. In doing so, I may repeat some facts and particulars stated in an article I wrote some time ago for the *Prairie Farmer* of this State.

1st. The Right Honorable Lord Forrester in Shropshire, England, had several hundred acres of cold, wet, clay land under the plough. The grain was poor, late in maturing, and not an average crop, compared with other land on the estate. On sinking the drains the clay was found to be so cold and wet that it was decided to drain from four to five feet deep.

Some laughed and others ridiculed the idea of putting in a drain five feet deep, and said through such a stiff clay, the water would never find the drain. Scores of men were put to work, and the land was drained with two and a half inch pipe (not tile) the drains being fourteen feet apart. The land gently fell to the west. At the mouth of each drain outlet was a little iron door fixed to the pipe by a spring pushed into the pipe, the door being on an easy playing hinge, so that if only a little water came out it was sufficient to force open the little door to admit of its flowing. The more water the wider the door was forced open, which opened and shut itself. Those doors were to prevent rats and moles from getting into the drain.

That effectually drained the land and made it some of the best wheat producing soils on the whole estate. For any person to take out, or steal, or break one of those little spring doors, was in the eye of the law, felony, and on conviction, the offender was sentenced to not less than three months hard labor on "The Tread Mill," up to seven years transportation; that kind of property coming under the head of "unprotected property."

Another gentleman had a deal of useless land, which grew little else but rushes, the water lying on the surface for months in the year. That land was drained with one and a quarter inch pipes laid three feet deep, and the rows twelve feet apart. After it was drained it was deeply ploughed in the fall, let lie till spring, then cross ploughed, sowed with red clover and rye grass, let grow till next year, and when the clover was in full blossom it was ploughed in the contrary way, just deep enough to cover the grass and clover, and in October sown with winter wheat. The rushes soon entirely disappeared and the whole field was transformed into some of the best land on that estate.

All drainage used to be done with tile; a flat tile placed in the bottom and then a four, five or six inch drain tile placed on the top of the flat one; but it was soon found that in filling in the drain it frequently got broken or cracked, which in time fell in and then stopped up the drain.

Pipes were then invented from one to six inches in the bore, which were not easily broken by any pressure, being quite round, and if a rat or mole got into the drain he had no other alternative but to back out.

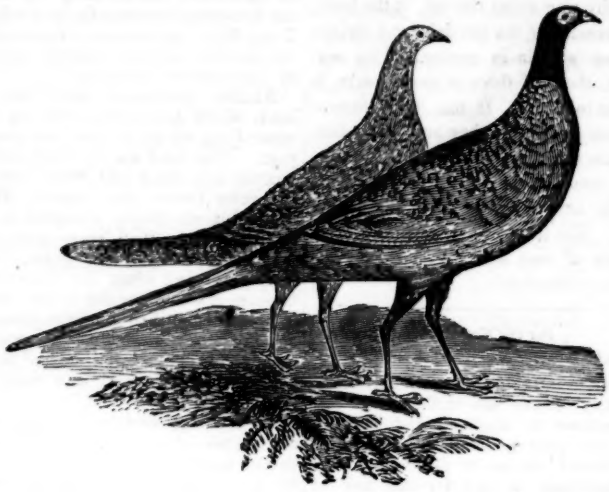
The pipes of one inch bore are nine inches long, others of larger dimensions, ten to twelve inches long, and sold by the thousand not by the foot.

Another instance was near the town I came from,—about one hundred acres of grass land which could at will be floated by the town sewer or brook. Surface drains or gutters were dug a spade's width, about six or eight inches deep, in different parts about the land, and the town filth turned on, and in a few hours the whole field would be inundated. It would be left inundated two or three days, when the bolt would be dropped and the water turned off. After a few years it was found the land became too rich, the grass so strong that while growing and looking well on the top, it was rotting in the bottom—and it was found necessary to underdrain. It was too rank for hay, and so it was always grazed by milking cows or fat cattle. The under drains were buried only about eighteen inches, and was drained with one and one-half inch pipe. Let the summer be ever so hot and dry there was always grass in those fields.

JOHN WHATMORE.

Bridgenorth Farm, Dunleith, Ill., 1870.

—Mr. M. L. Sullivant, of Burr Oaks, Ford Co., Ill., has this year planted 6,500 acres of land to corn.



ENGLISH PHEASANTS.

English farmers have one class of troubles and one source of annoyance, from which American farmers are happily exempt; we allude to the peculations of animals protected by game laws, and the privileges exercised by sportsmen. From the Norman conquest to the present day the game laws have been more or less severe. Originally the killing of one of the king's deers was equally penal with murdering one of his subjects. In 1389 it was enacted that "no manner of artificer, laborer, nor any other laymen who hath not lands and tenements to the value of forty shillings by the year, nor any priest or other clerk if he be not advanced to the value of ten pounds by the year," shall keep hunting dogs or use other means of killing game, upon pain of one year's imprisonment. The property qualification was abolished in 1831, and a certificate or license, costing nearly twenty dollars, must be taken out annually, to give one the right.

The law is still very severe against killing game on any land by unauthorized persons, and as the enforcement of the laws is in the hands of the class interested in preserving game, it is most rigidly enforced, and the privileged owners and hunters claim rights for themselves and their game that Yankee farmers would be very unwilling to concede.

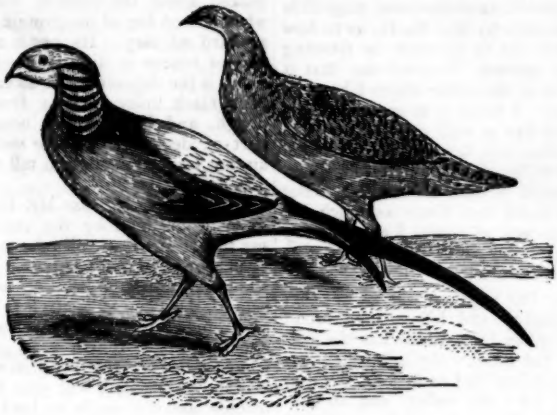
In addition to deers, foxes, hares, &c., several kinds of birds are protected by the game laws of England. Among these we often see pheasants named, and read accounts of pheasant shooting.

Peacocks, turkeys, Guinea hens, &c., are sometimes, we believe, included under the general name of Pheasant; but the word now is generally applied only to a single species, of which there are several varieties, two of which are represented by our illustrations.

The first cut shows a pair of Common Pheasants. The male is about three feet long, of which the tail is one-half; color bright rufous above; head and neck blue with green and golden reflection, and variegated with black and white; the cheeks bare and red; the side and lower parts purplish chestnut. The female is smaller, brownish gray, varied with reddish and dusky.

Golden Pheasant.

This magnificent bird is described by Mr. Wright as follows:—The head bears a crest of beautiful amber-colored feathers. The back of the head and neck is of a beautiful orange red, passing low down the breast into a deep scarlet, which is the color of the under parts. The neck feathers are arranged like plate-armor, and are often erected by the bird. The



The Golden Pheasant.

back is a deep gold color, the tail covert feathers being laced with crimson; tail-feathers brown mottled with black. The hen is of a more sober tint, being of a general brown color with dark markings.

Pheasants are naturally wild, and require great freedom and seclusion and much care in breeding. The eggs are often hatched under common hens. They are bred for beauty, not utility.

COARSE WOOL SHEEP IN LARGE FLOCKS.

All young, growing animals, other things being equal, need more food and that at shorter intervals than animals that have attained their growth. And the great secret of success in raising improved breeds of stock, is to furnish the young animals all the food they can digest and assimilate. As long as they are growing rapidly there is little danger of their getting too fat. The popular notion that we cannot keep Cotswold, Leicester, or Southdown sheep in large flocks arises from the fact that when so kept the young sheep and lambs do not get the extra food and attention that they require. I have a flock of over ninety thoroughbred Cotswolds and about two hundred and fifty Merinos. And I am satisfied that with the Cotswolds a *given weight of mutton* can be kept in a smaller space than with the Merinos. A neighbor said of the Cotswolds: "You cannot keep so many. You ought not to have more than a dozen or so. These sheep are not like Merinos. You can not keep them in large flocks. So-and-So tried it and the sheep pined away." Now all this is sheer and unadulterated nonsense. I happened to know the history of the flock he alluded to. Many of them were imported sheep, brought over at different times, by an English farmer who gave them good care and plenty of food, and they did remarkably well, although they had no "roots"—only good pasture in summer and plenty of good clover hay in winter. But by-and-by the farm and the stock passed into the hands of some young men who did not work the land as well, nor give the sheep the requisite attention, and both farm and flock run down rapidly. My father used to keep a large flock of Southdown and Leicester sheep, and I spent two years on the farm where one thousand splendid Hampshire down sheep were kept; I never heard the first intimation that there was any objection to having large flocks, provided they had plenty of food and the requisite care and attention.—*J. Harris, in American Agriculturist.*

Failure of Cows to Breed.—In the summer of 1868 I purchased an Ayrshire cow that for two seasons had failed to breed. During her first heat she was with the bull all day; she came in heat again, was served and left alone; the third and last time I was advised to bleed her; she being rather fleshy I took six quarts of blood from her; she was then served by the same bull; in due time she dropped a calf, and is now with calf again. When I have a cow left at my yard that is troubled as above, if low in flesh I take two or three quarts of blood from her and let the bull cover them once, and have not had one of them fail as yet.—*H. W. C., Derby, Conn., in Country Gentleman.*

For the New England Farmer.

DRYING MUCK FOR BEDDING.

In the Monthly Farmer for June, page 275, I notice an inquiry by Mr. Smith, as to how I dry my muck so as to prevent its freezing in winter. In answer, I would say that it would not freeze in the cellar where I keep it, if ever so wet. I keep it in one end of the basement, which has a wall on the back side and end, the other side being double-boarded and filled in with flax shives, and is so warm that apples would seldom freeze in it. But as dry muck is worth four times as much for an absorbent as wet, of course I get it as dry as possible, and I dry it in various ways as seems most convenient.

Last summer the weather was so wet that I drew up a quantity and left it in a broad pile at the end of the barn which has the cellar, and near the window through which it is thrown into the cellar, and as fast as the top dried, threw it into the cellar, and so continued to do until all was thrown in.

I get my supply from a small natural pond on my own premises, of about one-half acre in extent, and from one foot to four in depth. I have been at considerable expense to drain this pond, to make it more convenient to get out the muck. I find decayed leaves, wood and bark all the way through the muck, which lies on a bed of pure blue clay. The banks around the pond are hard land, and my usual practice is to throw the muck out on the bank in piles, and in ordinary seasons it will dry sufficiently to put into the cellar after haying. I throw it out at any and all times when I have leisure, and put it in the cellar at any time when it is dry and I can attend to it.

I have a Black Ash swamp of about four acres, in which the muck is from one foot to ten feet in depth. Last year I commenced to drain it. I took the muck from the ditches and put it in a heap near the barn, which was fortunate, as the season was such that it did not dry very deep at a time. I have put in quite a quantity the past week which was thrown out from the pond last fall. The exceedingly dry weather of the past month had made it like powder, and it was consequently in the very best condition.

If I had no barn cellar I would partition off a room in the stable, double-board it, and fill in with some non-conductor, put in the muck and cover over with straw and it would not freeze very much.

I see that Mr. Upham indulges in occasional flings at the use of muck. Now, it is seldom that I notice such things, but I should like to ask Mr. Upham what he understands by the term muck. He calls it "meadow muck," a term I never have used. I should infer from his article in the Monthly Farmer for April, that he would go into any low land meadow that had a black soil and take it for muck.

I have a neighbor that has a small pond on his place, from which, one season when it was dry, he carted out a quantity of the bottom which looked about the color of common clay, and when left on top of the ground to dry became as hard as clay. He put it on a clayey soil, and of course it did no good. What I call muck is the deposit in the swamps and ponds of a black color and as free from grit as dough, and I suppose is composed in good part of decayed vegetable matter, although I am not learned enough to tell what it is composed of.

Notwithstanding that Mr. Upham has spoilt some of his land by the use of muck, I will say that if any man will take muck out of my swamp or pond and compost it with one-third stable manure, and put it on his land by the side of the same bulk of clear stable manure, and if his crops for three years are not fully equal, and the fourth year greater, on the composted part than on that where the clear manure was used, I will pay him for all his trouble, and if it spoils his land I will buy that too. Understand that I am speaking of dry soils, either slaty, gravelly, sandy, or any soil not naturally moist or clayey.

It is singular how some men will jump at conclusions. One will apply a mixture of clay and iron ore or some other substance on clay land, which of course can do no good, and he then comes out and says that *muck* is of no benefit! All kinds of fertilizers, and all methods of application, sometimes fail; but it does not become the energetic, go ahead farmer to give up at the first failure. I have tried it for years, and I know that swamp muck is a good and cheap fertilizer for me to use on dry soils, and it is my opinion that there is no dry soils but it will benefit if properly applied; some more than others, undoubtedly, but all enough to pay its cost, if procured on the farm. B.

Oak Hill, N. Y., June, 1870.

MOVEMENT OF WATER IN THE SOIL.

If a wick be put in, a lamp containing oil, the oil, by capillary action, gradually permeates its whole length, that which is above as well as that below the surface of the liquid. When the lamp is set burning, the oil at the flame is consumed, and as each particle disappears, its place is supplied by a new one, until the lamp is empty or the flame extinguished.

Something quite analogous occurs in the soil, by which the plant is fed. The soil is at once lamp and wick, and the water of the soil represents the oil. Let evaporation of water from the surface of the soil or of the plant take the place of the combustion of oil from a wick, and the matter stands thus:— Let us suppose dew or rain to have saturated the ground with moisture for some depth. On recurrence of a dry atmosphere with sunshine and wind, the surface of the soil rapidly dries; but as each particle of water escapes (by

evaporation) into the atmosphere, its place is supplied (by capillarity) from the stores below. The ascending water brings along with it the soluble matters of the soil, and thus the roots of plants are situated in a stream of their appropriate food. The movement proceeds in this way so long as the surface is drier than the deeper soil. When, by rain or otherwise, the surface is saturated, it is like letting a thin stream of oil run upon the apex of the lamp wick—no more evaporation into the air can occur, and consequently there is no longer any ascent of water; on the contrary, the water by its own weight, penetrates the soil, and if the underlying ground be not saturated with moisture, as can happen where the subterranean fountains yield a meagre supply, then capillarity will aid gravity in its downward distribution.

It is certain that a portion of the mineral matters, and perhaps also some organic bodies which feed the plant, are more or less freely dissolved in the water of the soil. So long as evaporation goes on from the surface, so long there is a constant upward flow of these matters. Those portions which do not enter vegetation accumulate on or near the surface of the ground; when a rain falls, they are washed down again to a certain depth, and thus are kept constantly changing their place with the water, which is the vehicle of their distribution. In regions where rain falls periodically or not at all, this upward flow of the soil-water often causes an accumulation of salts on the surface of the ground. Thus in Bengal many soils which in the wet season produce the most luxuriant crops, during the rainless portion of the year become covered with white crusts of saltpetre. The beds of nitrate of soda that are found in Peru, and the carbonate of soda and other salts, which incrust the deserts of Utah, and often fill the air with alkaline dust, have accumulated in the same manner. So in our western caves the earth sheltered from rains is saturated with salt—epsom salts, Glauber's salts, and saltpetre, or mixtures of these. Often the rich soils of gardens is slightly incrusted in this manner in our summer weather; but the saline matters are carried into the soil with the next rain.

It is easy to see how, in a good soil, capillarity thus acts in keeping the roots of plants constantly immersed in a stream of water or moisture that is now ascending, now descending, but never at rest, and how the food of the plant is thus made to circulate around the organs fitted for absorbing it.

The same causes that maintain this perpetual supply of water and food to the plant are also efficacious in constantly preparing new supplies of food. As before explained, the materials of the soil are always undergoing decomposition, whereby the silica, lime, phosphoric acid, potash, &c., of the insoluble fragments of rock, become soluble in water and accessible to the plant. Water charged with carbonic acid and oxygen is the chief agent in these chemical changes. The more extensive and rapid the circulation of water in the soil, the more matters will be rendered soluble in a given time, and other things being equal the less will the soil be dependent on manures to keep up its fertility.—*Johnson's New Work, How Plants Feed.*

ECONOMY IN SMALL THINGS.

There is no truer saying in all the proverbial wisdom of sensible Old Richard's Almanac, than that, "he who saves in small things will in time rejoice in great possessions," and in so earnestly impressing the importance of economy upon the attention of Southern farmers, we think that the newspapers of that section are proving themselves the true friends of their readers. And there is great need for the practice of this homely virtue by the farmers of this State, who, with their large farms and heavy crops, are too much inclined to underrate the value of the innumerable small things about them, which by timely attention might be made to enhance their revenue. Tools and implements, if taken care of, would last much longer than they generally do; the sweepings of the hen-roost, the refuse from the hog-pen and the slops from the kitchen, with one-half their quantity of leaf mould from the fence corners in the woods, would furnish every week, two or three hundred pounds of fertilizing material, just as good as Chincha Island guano. This applied to the worn-out fields or gardens would largely increase the corn or vegetables, besides leaving the ground in an improved condition. Now there are numerous instances on every farm where things heretofore wasted as of no value, might by a trifling expenditure of labor, be utilized and made a source of profit. Why not, then, pay the needed attention to such matters as these, when the brief time required could be spared from more important concerns? There is, certainly, nothing discreditable in the prudence that seeks to prevent the waste of anything that may be rendered valuable. Is it the fear of being regarded penurious? Will you be led to disregard your own interests by such unworthy apprehensions? Certainly, the opinions of those who would ridicule such economy are not worth retaining. We do not ask our readers to be miserly and avaricious, and we urge only the duty of economy. There is a very wide difference between stinginess and prudence, for the one is to be condemned and the other approved. The true philosophy of life is, to enjoy in moderation the goods we have, not wasting nor hoarding, and this is the practice we commend.

In times past, more frequently than at the present, comparisons were instituted between the system of farming practiced at the North and that followed in Kentucky, very much to the discredit of our people. Now, if the farmer

in Massachusetts or New Hampshire makes more money in the year from a tract of not naturally fertile land, with the disadvantage of a severe climate, than the Kentuckian did on a greater number of acres of land as productive as any in the world, the result must not be attributed to any superior shrewdness, better judgment or greater skill, upon the part of the Northern man, but simply to the fact that he never allows anything to go to waste, no spot to remain idle, no opportunity to save or improve the place, to go unimproved. His stock are housed in winter and their manure all saved to go on the "poor points;" the feeding is carefully done so that nothing is lost, and yet, we doubt, whether, on the whole, any person enjoys life more fully than this provident, industrious man. We have eminent authority for the assertion that "comparisons are odious" and we have referred to this difference in systems in order to point the moral, that economy, watchfulness, and attention to small matters, will bring profitable results to our people as well as to those in other sections.

We are entering upon a new era in the South, and we are hopeful that a few years hence will witness a more rapid progress in agriculture, and a greater degree of prosperity for our people, than has ever been before. The cultivation will be more thorough, and our people will learn to utilize many things that were thought to be too insignificant for notice in the slow-plodding, unenterprising ante-bellum days—and then we will see the beginning of our growth in wealth, importance and power as a State.—*Farmers' Home Journal, Lexington, Ky.*

Remarks.—In copying the foregoing sensible remarks from one of our best agricultural exchanges, we cannot avoid the expression of a fear that, while the Southern people are adopting those principles of economy and industry which laid the foundation of the prosperity of New England, the people of the North are, in turn, falling into those habits of carelessness as to incurring debts and expending money, that dread of being considered penurious, and that dislike of labor, which resulted so disastrously at the South.

MULCHING BEARING FRUIT TREES.

There is no doubt now by our most intelligent horticulturists about the practical advantages to be gained by mulching the surface of the orchard and fruit garden. This, should be more generally practiced in fruit-producing districts, for it is the least expensive and most effective method of protecting the fruit trees against the bad results often following the frequent and sudden changes of temperature during the summer and fall months, when the surface of the ground is left exposed to the direct rays of the sun. Again, when the mulch is put two or three inches in thickness, the surface soil is constantly moist and loose, even when no rain falls for a term of several weeks, and the trees or fruit receive no check for want of moisture and food under such circumstances.

My method is to cultivate the spaces between the rows of trees in the orchard, using a small one-horse plough and cultivator, running not more than two inches deep, during the early part of the season. From the 1st to the 15th of July I have put on a heavy coating of salt hay, covering the surface as far as the branches extend. After this there is no more trouble with weeds and grass. There may a few scattered ones start up, but they are easily destroyed.

Every fruit-grower knows that two or three weeks before the time of gathering the main crop of fruit, fine specimens are constantly falling off or blown off by strong winds. When the ground is mulched the majority of such specimens are not bruised or injured for sale. This saving alone I consider pays me for the trouble of mulching the orchard.

There is only one serious drawback to the application of a mulch, that is the danger of the hay or straw getting on fire when rendered dry by continual warm weather.—*P. T. Quinn, in N. Y. Tribune.*

For the New England Farmer.

HOW TO MAKE THE MOST MONEY FROM THE FARM.

The following is an abridgment of an address given by M. J. Harvey, Esq., at the March meeting of the Epping, N. H., Farmers' Club, as introductory to the discussion of the question "How to make the most Money from the Farm."

Before attempting to answer the question which comes before the club this evening, perhaps I ought, in the first place, to attempt to prove that any money at all can be made from the farm. If we take men's actions as evidence of their opinions, must we not meet the stern and inevitable fact that "no money can be made by farming?" To prove that such is the opinion of nine-tenths of the farmers of this town, do we need any better evidence than is furnished by the course pursued by their sons, a large proportion of whom leave the paternal acres, and go to the villages or cities for a clerkship or a trade? Would they do this if their fathers thought an equal amount of money could be made on the farm?

Leaving this question for some future debate, I will, before proceeding to answer the question how to make the most money from the farm, mention a few ways in which not to do it.

I have seen so-called farmers pitch out their manure in heaps against the side of their barn,

exposed to sun, wind, and rain, until the boards are rotted away, leaving large holes in to their cattle stalls, admitting cold and storm; then the boards are turned bottom end up, leaving the same holes against the hay mow above. I have seen others plough and not plant; plant and not hoe. Others make no effort to furnish absorbents to hog yard or stable; they never lay up the stones that fell from the walls in the days of their fathers, forty years ago. I heard such an one testify upon the witness stand that "he was a farmer," a fact that I should have hardly credited, did he not positively swear to it. Others taking up the patriarchal cry, "go down into Egypt and buy corn," depend on the West for their bread. Others feed their crops on commercial fertilizers, and send their farms into Boston market in the potato sack and the hay bale.

If any money can be made by farming in these ways, it is evident that we have not yet answered the question, "how to make the most money from our farms." Such practices were tested three thousand years ago. The ruins of twenty-seven cities on the banks of the Nile, partly covered by drifting sands, attest to the former prosperity of the agriculture of old classic Egypt, first in the science of astronomy and architecture, as well as agriculture. Country produce was transported to those cities to be consumed, but nothing returned to the soil. All this manurial matter was suffered for ages to pass with the waters of the Nile into the Mediterranean, thence perhaps into the Atlantic, possibly to be deposited on the Chincha islands—thus, perhaps, answering the disputed question of our last evening—where it was stored for the use of a people living in a then undiscovered world.

Save the Manure.

This is the first thing for us to do who wish to make the most money from the farm. This is the great Archimedean lever in agriculture. It is the corner-stone of the foundation of all successful farming. By increasing the manure heaps you take the first steps towards "making the most money from the farm."

Give me plenty of manure and I can spread a corn field in every valley; cover every hill side with waving grain; "make the desert blossom as the rose;" load a vessel with provision for every hamlet of half starved and down-trodden Ireland; and hasten on the Millennial days spoken of by Isaiah, so far as the landscape is concerned.

The manure heap can be increased by furnishing hog yards, cattle and horse stalls with turf, as an absorbent, from the road side, from under the stone walls in the fields, and such corners as no plough can reach. A thousand loads can be taken from every small farm, from places where grass has rotted and leaves collected, and only bring the banks down as low as they were fifty years ago. Saw dust and swamp mud answer the same purpose.

Cattle and horses should be housed in summer as well as winter, and absorbents be spread under them to save the liquid part of the manure, which, according to Dana, is fully equal to the solid. My own experience proves it to be better. In 1857 I spread loam soaked with cattle urine on one end of a piece of oats, and on the other end solid manure. Where the urine was spread the crop was far the heaviest and darkest colored.

Swamp mud, a thousand loads of which may be found on almost every farm, when rightly prepared, by being drawn out before hand and exposed to sun and frost to remove its acidity, and then mixed with ashes or lime, is another great manurial element to help you "make the most money from the farm."

In confirmation of these views, I quote from Dr. Andrew Nichols in the Agricultural Transactions of Essex County, Mass. He says: "If from six to eight bushels of lime are thoroughly mixed with 100 bushels of muck, and that amount applied for two or three years in succession, it will not only bring good crops during the years of its application, but in connection with other manures usually employed, will give a permanent fertility to the land."

On this subject, Mr. Holbrook says: "I have frequently applied a compost of muck with dry slacked lime, though, when I can buy ashes readily at not too high a price, I prefer a given outlay in ashes, rather than lime. The best fresh unslacked lime is the cheapest, because it is more effective in compost, and swells very much in bulk, when dry slacked for use. Six years ago I had a heap of seventy-five half cords of muck, mixed with lime, in the proportion of half a cord of muck to a bushel of lime. The muck was drawn to the field when wanted in August. A bushel of salt to a tierce of lime (6 bushels) was dissolved in water enough to slake the lime down to a dry fine powder, the lime being slacked no faster than wanted, and spread immediately while warm over the layers of muck, which were about six inches thick; then a coating of lime, and so on until the heap reached a height of five feet, and of a convenient width and length to embrace the whole quantity of muck. In about three weeks a powerful decomposition was apparent and the heap was nicely overhauled. Nothing more was done to it till it was loaded the next spring for spreading. The compost was spread on the ploughed surface of a dry sandy loam, and harrowed in at the rate of fifteen cords to the acre. The land was planted with corn, and the crop was more than *sixty bushels to the acre.*"

You can see that this is fully equal to barn yard manure, as fifty bushels to the acre of corn is more than an average crop with us, where ten cords of the best barn yard manure is used to the acre. Larger reports are made of late, but I can say that the framers of these

reports are ahead of us in exaggeration, or we are behind them in agricultural science.

Forest leaves are another great auxiliary to the manure heap, and consequently to "making the most money from the farm." Every acre of forest leaves, where the rotten mould is three or four inches deep is sufficient to manure an acre in the field, equal, in my opinion, once every five years, to twenty loads of barn yard manure. It contains two out of the four bases required for plant food, viz.: potash and nitre; also a large amount of vegetable matter. I have heard of a man who lost all of his large farm but twenty acres, inherited from his father, by dissipation, and who, on concluding to reform, having no manure nor stock, collected from a few acres of pine growth the leaves and mould which he spread and ploughed in to his worn out acres. By this means alone he brought his land up to a high state of fertility, so that it produced more than the whole farm formerly did.

Application of Manure.

The subject of the application of manure is next to be considered. If I collect all the materials for a splendid house and fail in architectural skill in building, I become a derision and reproach to the passer by. If Solomon in all his glory, after he had gathered the gold and silver for his great temple, had failed to employ the cunning workmen of the King of Tyre, he would have become the laughing stock for surrounding nations. So if manure is misapplied, your labor is lost, and proper results are not obtained.

I think manure should be harrowed in on wet land and ploughed in on dry land. Then, in the first case, it will not be leached and go down below the reach of plant roots, nor in the other case, be too high and dry above them, and its strength evaporated in the air, as it was with me on a piece of corn, in 1863. This was broken up ten inches deep, the fall before. Eighty loads of compost and barn yard manure were harrowed in on the furrow. It was planted with 13,000 hills of corn, which started well, but soon dwindled and proved not worth harvesting. Last year I made a failure on the other extreme. On less than half an acre of tough barn grass sward, I spread fourteen loads of barn yard manure, and ploughed under and planted with corn, the roots of which could not penetrate downwards in season to reach the manure, and poor corn was again the result.

Low land should be ploughed, where practicable, even if you have to use a steel plough, and be laid up in beds of about twenty furrows each, leaving a dead furrow between for water to run off, and a compost of sand, rather than muck, applied to the surface, soaked with cattle urine from the barn yard or under the stable floors, and sowed down to herdsgrass. Treated in this way it will bear heavy burdens of grass for a long series of years, the proceeds of which, in the shape of barn yard manure, can be carried on to the high ground where it is so often needed.

Flowage.

Next in order comes the subject of flowage or irrigation; not that method by which water is conducted along the brows of hills in ditches at great expense. I once knew a young man in Gilmanton, who inherited a thousand acres of land and thousands of dollars at interest, yet came near bankruptcy by digging ditches miles in extent, to irrigate his fields in this way. I refer to the winter flowage of natural meadows through which a stream of water runs. Only a short dam is needed near the outlet to effect the purpose, with a bulk-head by which the water can be let on or off, and its depth regulated. Land thus flowed would be enriched by an annual deposit of fertilizing matter. Millions of tons of hay might be added to the crops in the New England States by this method. This principle was also well understood by the nations of antiquity. The flat fields of old Egypt were fertilized by the annual overflow of Father Nile, while her once productive lands, lying above the reach of the enriching waters, became a desert of shifting sands. Ancient Rome, too, has remains of vast works which show that the value of water was well understood by the farmers of old. Virgil, in Georgic 1st, says:—

"Lo! on yon brow, whence bubbling springs arise,
The peasant bending o'er the expanse below
Directs the channel'd waters where to flow,
Down the smooth rocks melodious murmurings glide,
And a new verdure gleams beneath the tide."

Isaiah testifies to the same sentiment, "As the rain and the snow that cometh down from heaven, returneth not thither again, but watereth the earth and causeth it to bud and blossom, and bring forth seed to the sower and bread to the reaper," &c. Snow water, according to Dana, contains 25 per cent. of ammonia.

[A member, Mr. T. Dow, here remarked, that he "had tried it, and made a fine skating pond of his field for the boys, and that his crop of grass was increased four-fold, but it was nothing but swamp grass; every particle of English grass was killed out. English grass will not grow where the roots do not freeze in winter."]

I admit the truth of the statement. Put down your gate, then, in the spring as the snow begins to go off, and flow your land for two or three weeks and you will get the full benefit of the water and loose no English grass.

Stock.

Next, what kind of stock shall we keep to make the most money? Since the war yearlings and two-year-olds have nearly doubled the farmer's money in one year; cows come next in profit, often times doubling the price from fall to spring. As to breeds, I think experience teaches us that the native is best

adapted to our keeping, which is not the best with the majority of farmers, having much swamp hay and corn fodder and hay of inferior quality. I knew a mechanic who had acquired money by his trade, who bought a farm, and having read much of the crack stock in the agricultural papers, bought a Durham bull and commenced raising stock. As he fed much inferior hay, his stock was inferior to that of his neighbors who kept the native breed, being gaunt, long legged and poor. Take care to breed from the best native stock and all will be well.

The Orchard.

Next comes the orchard in our programme. I do not believe in continually ploughing it or that it should be heavily manured, as trees thus treated soon die. There are millions of small roots that run close to the surface and carry sustenance to the tree from the best of the soil. Cut these often, with the plough and you oblige the tree to draw sustenance through the lower roots from the barren subsoil. Neither should orchards go to grass and have it mowed off every year or fed off by cattle. They should be fenced as in old times, when no complaint was made of barren trees, and the grass that grows up suffered to fall down and rot on the surface, forming a mulch and keeping the surface of the ground loose and rich.

The Forest.

Last of all I shall mention the forest. Many of the New England farmers, from the increase of taxes or lack of agricultural skill in keeping up the fertility of their fields, have encroached and committed vandalism upon the forests left them by their prudent fathers. Now that the price of wood and timber has more than doubled since the commencement of the late war, I think the way for you "to make the most money from the farm," is to stand guard with gun and bayonet if need be over your forest trees. I quote from an article in the *New York Sun*:—"There is danger that before many years have passed that the United States will become a country without trees. A treeless country is equivalant to an arid desert land, in which agriculture is an impossibility. As trees disappear from the heads of the great water courses from whence much of our timber comes, the rivers lessen in volume, the annual fall of rain throughout the cleared district diminishes and the agricultural product is reduced. Should the destruction of timber in this country continue with its present rapidity, and no provision be made for replanting forests, all the States will probably become a rainless region, like Arizona, where crops can be raised only by expensive irrigation. The present consumption of wood in the United States is enormous. One hundred and fifty thousand acres of the best of timber is cut every year for railroad sleepers alone. For railroad buildings, repairs and cars, the annual expenditure in wood is thirty-eight millions of dollars. In a single year the locomotives in the United States consume forty-six millions of dollars worth of wood. There are in the whole country more than four hundred thousand artizans in wood; and if the value of their labor is one thousand dollars a year each, the wood industry of the country represents an amount of nearly five hundred millions of dollars per annum." Thus, if the statements of this article, from which I make but a meagre quotation, be true, one more way to make the most money from the farm, is to preserve the growth of the wood and timber.

Epping, N. H., March, 1870.

A WHOLESOME DRINK FOR SUMMER.

More than once we have had occasion to speak of the injurious effects of drinking large quantities of cold water during the hot weather; and have also advised our readers to follow the suggestion of an old and esteemed physician, long in successful practice in this State years ago, to use only hot or warm drinks during the excessively hot weather of summer. This physician advised the housewife to always have the teapot upon the stove, that the workmen at haying might have warm drink, as it satisfied thirst much better than cold water, was more healthful, and when accustomed to its use would be preferred by the men themselves. In our desire to suggest all the comfort possible to men obliged to labor hard in the heat of a summer sun, we again mention the above, and also present the following receipt for a wholesome field drink, furnished by "a farmer's wife" to the *Germantown Telegraph*:—

"Take of the best white Jamaica ginger root, carefully bruised, two ounces; cream of tartar, one ounce; water, six quarts, to be boiled for about five minutes, then strained; to the strained liquor add one pound of sugar, and again place it over the fire; keep it well stirred till the sugar is perfectly dissolved, and then pour it into an earthen vessel, into which you have previously put two drachms of tartaric acid, and the rind of one lemon, and let it remain till the heat is reduced to a lukewarm temperature; then add a tablespoonful of yeast, stirring them well together, and bottle for use. The corks must be well secured. The drink will be in high perfection in four or five days. This is a very refreshing and wholesome beverage, and one which may be largely partaken of without any unpleasant results even in the hottest weather." *Maine Farmer.*

—Mr. J. N. Bagg, of West Springfield, Mass., editor of the Ayrshire Herd Book, is about to prepare another volume of that valuable work. It will be issued in the latter part of this year, and breeders of Ayrshire stock are invited to forward pedigrees, &c.

BOTS IN THE URINAL BLADDER.

Mr. H. L. Small of this place has just lost a horse under rather peculiar circumstances. No one in this section ever saw or heard of a like occurrence. The horse lived about ten days from the first appearance of any difficulty, which to all appearance was a stoppage of water. An examination after death revealed the fact that the bladder contained upward of one hundred bots, similar in all respects to those fennd in the stomach of all horses. They covered over two thirds of the interior of the bladder, sticking tenaciously to it, and in many places having nearly eaten through. The bladder where they had eaten presented a purple hue, but the portion that was untouched looked healthy and natural.

Now we would like to know how these bots obtained access into the interior of the bladder, as the exterior and all other parts of the water passages were sound and whole. Mr. Small has the bladder, together with the bots as taken from the horse, preserved in alcohol, and will Dr. Dadd or some one of the professional horse surgeons answer through the columns of the Farmer the above inquiry. D. G. Spaulding.

Brownsville, West Windsor, Vt., May 30, 1870.

Remarks.—We have examined all the books on veterinary practice to which we could get access; also, the extensive correspondence of Prof. Law, as reported in the New York *Tribune*, and we fail to find a case parallel to the one here described.

Bots are not, as many persons suppose, worms which commence and terminate their existence in the stomach and intestines of the horse, but they are the *larvæ* or maggots of the *horse gad-fly*. Guided by instinct, the female fly deposits her eggs or "nits" on such parts of the horse as are within reach of the animal's mouth—usually upon the fore legs. Here they occasion some degree of irritation, to relieve which, they are seized with the tongue and teeth, and conveyed into the mouth, whence they easily reach the stomach. Subjected to the warmth and other favorable conditions afforded by that organ, these nits are soon converted into *larvæ* or "bots," and fasten themselves to the walls of their temporary abode. Here they feed upon the nutriment contained in the stomach, and, unless disturbed by disease or the action of medicines, remain in these comfortable quarters until the approach of the time for their final metamorphosis. They then detach themselves from the inner coat of the stomach, pass along with the food and feces through the intestines, are ejected from the rectum with the dung, and very soon, (the time being proportioned to the degree of temperature to which they may be exposed,) they are changed into a perfect insect—a full grown *gad-fly*. Such, in brief, is the history of that little insect, one stage of whose existence is represented by the loathsome maggot called *bot*, and which in this *larva* state is the great humbug of ignorant "horse doctors."

How often, and to what extent, the presence of bots in the stomach of a horse may become a source of disease, is a disputed question. Doubtless they produce discomfort sometimes, and when existing in large nnmbers, they may occasion serious disease; but the most learned naturalists and the most skilful veterinarians agree in the opinion that they are far less injurious than most persons suppose them to be; indeed, it is well known that they exist in considerable numbers in the stomachs of most horses, at particular seasons of the year, and that without disturbing the animal's health in the least.

The idea that bots gnaw or feed upon a healthy stomach, eating their way through it, sometime, and escaping into other portions of the body, is an erroneous one. The horse's stomach is their natural habitation, and unless disturbed by some unnatural cause, they will not leave it until their appointed time. But this organ may become diseased. By too much food, by improper food, by too much medicine, by improper medicine, or by the operation of some other cause or combination of causes, inflammation may invade the stomach. The horse stamps with his fore feet, strikes at his belly with his hind ones, groans, looks anxiously and frequently behind him, lies down, gets up, lies down again, bites at his sides, and in various ways manifests his intense suffering, and his anxiety to obtain relief. The neighbors assemble; one calls it a case of bots, another calls it something else, and each recommends a remedy. But the animal gets "no better very fast," and a "horse-doctor" is summoned, who, perhaps, possesses a little more knowledge of diseases and remedies than his patient does. Medicines are now administered with an unsparing hand. The doctor shouts "bots!" and tries his best to find something *strong* enough to kill the bots, and *weak* enough to save the horse! But the disease progresses—aggravated, it may be, by the treatment; adhesions and ulcerations, more or less extensive, take place; gangrene or mortification ensues; and the poor sufferer succumbs, at last, to the combined forces of dis-

ease and doctor. A *post-mortem* or after death examination reveals the presence of bots in the stomach, in the intestines, in the cavity of the abdomen outside of the intestines, and in various other localities; whereupon the doctor looks exceedingly wise, and with the pomposity that ignorance usually imparts, exclaims: "There! Mr. Smith; didn't I tell you it was the bots that ailed your horse?"

But we are requested to account for the presence of bots in the urinary bladder. Our first thought, on reading Mr. Spaulding's letter, was that our Brownsville friends were mistaken,—that they had been deceived by appearances,—that what they supposed to be bots were some other substance. Stone and perhaps other materials have been found in that organ, but nothing with animal life, so far as we had ever heard. But wishing to consult those better informed than ourselves, and as Dr. Dadd, alluded to by our correspondent is dead, we wrote to a gentleman whose opinion is entitled to as much respect as that of any veterinary practitioner in the State, stating in brief the facts detailed in the communication from Mr. Spaulding. We have been favored with the following reply:—

MESSRS. B. P. EATON & Co.—*Gents*:—Yours of June 2d came duly to hand and contents noticed. After thirty years' experience in the cure of horses, I can say that I never knew of death being caused by bots. After a certain time nature expels them from the system. The case you speak of—bots in the bladder—is absurd. No such thing could happen. Yours Respectfully,

J. HENRY JENNINGS, Veterinary Surgeon.

Cambridgeport, Mass., June 8, 1870.

But Mr. Small has the bladder and the bots preserved for exhibition. Mr. Spaulding says they are similar in all respects to those found in the stomachs of horses. Now supposing there is no mistake in these statements, or in the facts and appearances on which they are based, bots were found in the urinary bladder of the horse in this case, if never before. If they were there, two ways occur to our mind by which it is possible they obtained access to the interior of that organ.

First. It is possible there had been active and extensive inflammation of the bladder, which was indicated by the appearance of that organ after death. Ulceration and gangrene followed the inflammation; this, also, is evident from the appearance of the organ. Such extensive inflammation, ulceration, and gangrene would, almost necessarily, involve adjacent parts—especially that portion of the intestines which lies near to the bladder, and *adhesion* and *perforation* of the several parts involved would very naturally occur. In this way an opening might be made between the intestinal canal and the bladder, which could not easily be detected, except by the careful dissection of the parts, made by a person who expected to find such a thing.

Second. By some unaccountable perversion of instinct, the female fly might have deposited her eggs at the extremity of or within the *urethra* or pipe which conducts the urine from the bladder; and when hatched, the maggots might have found their way along the urethra, through the *sphincter*, or that band of muscular fibres which surrounds and closes the neck of the bladder, and finally into the bladder itself. We have known beans, peas, pebbles, and other small articles to be passed into the human bladder; and why might not a little maggot find its way into the bladder of a horse? The chief difficulty in the case seems to be in the number of bots found. We can more easily believe that a small number of these creatures might travel this road, than that a hundred or more of them should do so. This is a pretty severe tax on our credulity.

But supposing the bots to have obtained a lodgment in this unnatural tenement, the questions then arise, how did they live there? how did they resist the usually deleterious effects on animal life of the contents of this organ? This is something for which we are unable to suggest even a possible cause.

NOW AND THEN.

"There are none so blind as those who won't see."

A farmer who used to team a good deal on the road to Boston forty years ago, said to us the other day that he formerly took many barrels of cider into that market. His load was made up of barrels, each including cider and barrel, weighing 300 pounds; in all 2400 pounds. Distance, twenty-five miles.

To haul this load he had *four* oxen and *one* horse, and it was load enough for them.

"Now," said he, "we take 3000 pounds of hay, or other product, over the same road with one horse!"

"Why this difference?" we inquired.

"Because," said he, "the team was a *meadow hay team*, small, poor and weak, compared with the team I drive now. The wagon went hard, because it was not made right; it was too heavy in some parts and too weak in others, and did not

run stiff and strong over the road. When the wheels struck a stone the wheel oxen would be jerked to one side or the other, so that there was a continual wiggle with wagon and team. The roads were bad, and altogether it was a considerable of a job to get *eight dollars*, all that the whole load brought."

In conversation with another farmer the other day, he said "there had been no improvement in the plough for the last forty years," although he ploughs two acres now with a pair of horses, in about the same time that he ploughed one acre, forty years ago, and does the work much better. There certainly is truth in the old adage, that "There are none so blind as those who *won't* see."

Epping, N. H. Farmers' Club.—In a note accompanying the abstract of his address, published on another page, Mr. Harvey says that the North River District is the nucleus of this flourishing association, and is, perhaps, the most wealthy and energetic agricultural portion of the town. The owners of these well cultivated farms, and of the fine buildings which stand upon them, are, without any exception, holders of government bonds, and other evidences of invested capital, all accumulated by themselves or their predecessors by farming; and yet some of these men join in the common assertion that "nothing can be made at farming!" To the progressive and believing farmer the growing interest in farmers' clubs, and the increasing readiness of the conductors of the local public press to publish agricultural matter, is most encouraging and hopeful. Though farmers are busy with hard work at this season, they will observe and note facts which may be used next winter when they meet with their neighbors to talk over matters connected with their business. Those who attended such meetings last winter, will perhaps be surprised by the frequency with which they will be reminded, while at work, of something that was then said, or of something that might have been said, at those discussions. In quickening the power, or improving the habit of observation, one of the most valuable results of farmers' clubs will be experienced by every member.

Tomato Fly, not Worm, Poisonous.—S. Haynes, M. D., of Saranac, N. Y., details in the Plattsburg *Sentinel* the particulars of the poisoning of one of his patients by a green fly. The insect has a long bill and legs something like a mosquito. He was handling over some tomatoes that he had just gathered, when feeling pain in his forefinger he brushed off a fly. The pain continuing, he soaked the finger in kerosene and in turpentine, which gave relief. On handling the tomatoes again, he saw the same or a similar fly alight on his thumb, and he watched its operation. He says, "the part where the bill was planted began to burn and feel very disagreeable, and shooting pains extended up the arm, and finally the thumb swelled as large as three or four thumbs, and the swelling extended to the whole hand and arm and glands in the hollow of the arm, and finally, the pain extended to the head, particularly on the side of the injured thumb, and the side of the body became affected." After twenty-one days he had not fully recovered.

Dr. Haynes believes the stories of the poisonous effects of the tomato worm to be founded on facts; but that this fly, and not the worm, is the fact to be guarded against. The experience and observation of others are solicited.

The Agricultural Horse Trot a Precedent.—In the discussion in the Massachusetts House of Representatives on the Governor's veto of a bill to legalize horse-racing, Mr. Woodbury urged that it was unfair that tracks near the city of Boston should not be allowed to offer prizes for trotting horses as well as the little tracks in the interior of the State. Mr. Sweetser, of Lowell was still more explicit. He said that "the same thing which this bill sought to legalize, was already done under the cover of law by agricultural societies. Purses were nominally offered by the societies, but were really made up by the men who entered their horses." It is certainly a little curious that the presence of a few bulls, cows, sheep and pigs, should legalize prizes and purses, betting and gambling on Fair grounds in the country, which are considered detrimental to public morals at the race courses near the city. This distinction, however, is a compliment to the managers of agricultural fair grounds. The law allows them to do what it forbids being done by jockeys. Hence, for the savor of respectability, our law-abiding citizens hold agricultural "meetings" and "fairs" instead of "horse races," and multitudes attend the "Show" to see the "Race."

Cement Water Pipe.—The injurious effects of lead on water has caused much inquiry for some practical substitute for this metal in conducting water, intended for domestic purposes. Mr. N. Reed of Duchess County, N. Y., writes to the *Country Gentleman* that hydraulic cement is extensively used in his section, and is preferred on account of its freedom from all poisonous effects, its durability, cheapness, &c., to lead, iron or wood. An inch and a quarter pipe was laid from a spring to his buildings a distance of 120 rods for $144 for the pipe,—less than seven and a half cents a foot,—the whole cost of digging, covering, and including some iron and lead pipe, &c. for pentstocks, &c., was $238. He says its durability must be indefinite, as it grows harder for several years, till it becomes as solid as stone; but if broken by accident it is easily mended. The best Rosendale lime should be used, and the work should be done by one who understands the business.

—Minnesota has 66,000 less sheep than it had two years ago.

EXTRACTS AND REPLIES.

THE SEASON IN WESTERN MASSACHUSETTS.

The wet, lowry weather of late has been favorable for grass, and the prospects for a fair crop of hay are more flattering. Corn has come up well, but its growth and perfection will depend very much on the weather during the summer months. Not the usual quantity planted in this section. Broom corn looks finely for this season of the year. Onions have come forward rapidly, but the maggots are destroying them to some extent. Strawberries are being gathered for market. Apple trees are fruiting well and making a vigorous growth. Shall we mulch them? Early peas will soon be ready to pick. Can they be packed for market in anything better than barrels? Raspberries are looking firstrate, and with favorable weather will ripen about the first of July. Shall we send them to market in boxes or baskets? Farmers here are amusing themselves by hoeing corn and weeding onions—being firm believers in thorough culture. W.

Sunderland, Mass., June 13, 1870.

REMARKS.—Mr. Pierce of Arlington, Mass., who has raised good crops of apples yearly during all the many past poor fruit seasons, ascribes great virtue to mulch. On another page of this number you will find an article on the subject by an experienced fruit cultivator.

Most of the small fruit raised in the vicinity of Boston comes to market in boxes; that from the south in baskets. We think the baskets are gradually taking the place of boxes.

THE CURRANT WORM.

The currant worm attacked my bushes last fall and damaged them badly, and this spring they began early. I met them with a determination to conquer and have finished the war. Of the various remedies I used it is useless to speak, but they were many. At last I tried the poke and that finished them. I had about thirty rods of bushes, and I boiled a bushel of the roots and applied it with a force pump, and I found it to be a specific, though more than one application may be required, and now the foliage begins to look healthy. If it is not too late you can give the remedy and warrant a cure to all that will apply it faithfully.

E. W. ORMSBEE.

Montpelier, Vt., June 14, 1870.

REMARKS.—We regard this as a very valuable communication. White Hellebore, Carbolic acid preparations, &c., which have been used and recommended by "book farmers" and chemical men are somewhat costly, some of them rather dangerous poisons, and on many farms cannot always be immediately obtained. Poke roots are a home-grown material and can be had at any time on most farms for the digging. And if a decoction of them proves destructive to these insects, the public will thank Mr. Ormsbee for his perseverance in the experiments which resulted in his discovery.

Mr. Ormsbee says his bushes were injured last fall. This is an important fact, as the currant worm appears in the spring, and then again later in the season. We wish he had stated at what time they commenced their fall operations. Mr. Riley, editor of the *American Entomologist*, published in St. Louis, Mo., says in that section the second brood bursts from the cocoons of the first brood about the last week in June or the first part of July, or occasionally not until the beginning of August. Probably they appear later further north. A correspondent of the same paper, living in Canada, says that after a brief absence he visited his garden on the 19th of August, and found the worms were again stripping his bushes. This second brood must therefore be fought as well as the first.

The *Entomologist* says the first brood appears in the spring. The fly deposits its eggs along the principal veins on the underside of the leaf. From these eggs worms with eighteen, twenty or twenty-two legs soon hatch, with black heads and many black dots on their bodies, but after moulting for the last time they are entirely of a grass green or yellow color, except large eye-spots on each side of the head. After attaining their full growth of full three-quarters of an inch, they burrow in the ground or elsewhere, spin a thin oval cocoon of brown silk and assume the pupa state, from which the perfect saw-fly again come forth, as before stated, in July or August. These go through a similar process and furnish the army which appears in the spring. Hence it is not yet too late to publish Mr. Ormsbee's remedy, as the second battalion will need a dose of poke.

Currant worms of other kinds have always been known in this country. But the one that is now making such sad havoc is a foreigner, that landed on our shores only about a dozen years ago.

TURNING FARMER.—BUYING AND HIRING FARMS.

As you are always ready to answer all reasonable inquiries, I take the liberty to ask your advice. I am a journeyman mechanic, and a constant reader of your valuable paper, and as close confinement indoors injures my health, I desire to go into the country and own a few acres of land near some good reliable market. Now I have not capital to amount to more than six or seven hundred dollars, which I want to invest to the best advantage. If I buy I shall be obliged to pay my small capital down, and then have nothing to commence farming with. Would it be possible for me to lease a small place for from three to five years, with the privilege of buying at the expiration of said time, or before, and what had been paid as rent be added as so much toward the purchase? What do you think of the suggestion, and how shall I proceed to find such a place, providing such terms can be had. A MAINE BOY.

Boston Highlands, Mass., June 12, 1870.

REMARKS.—You are a journeyman mechanic, but on proposing to change your present business for that of farming you think of assuming at once the character and responsibilities of "boss." We are entirely ignorant of your qualifications for that position. When landsmen turn sailors, they seldom make their first voyage as Captain, however small the vessel. When farmers turn mechanics, they seldom buy a shop to begin with. And the same is true of men generally who engage in a new business. Why farming should be an exception to the general rule, we do not know,

nor do we think it is safe to assume that it is an exception. If you do not understand farming, if you have yet to learn the trade, we think it would be better and cheaper to commence as an apprentice or journeyman under the instruction of some good workman who understands the particular branch of farming that you prefer. The idea that anybody can be a farmer is just as true, undoubtedly, as the assertion, sometimes made, that any body can be a musician, a mechanic, merchant, &c. No one can be either only by learning how. And in learning farming an instructor or master is just as beneficial and necessary, as in learning any of the mechanic arts, any of the professions, or any of the fine arts.

Farms can be purchased on almost any reasonable terms, in almost any section of the country. And we can think of no better way for you to proceed to find a place to suit you than to invest your money safely, go to work as a journeyman farmer in such location as you fancy, and as you work, and learn, and establish a reputation, keep your eyes and ears open for the best opportunity for a permanent location. It is by no means uncommon that farms, or at least land, can be hired for a few years for a much less rent than the interest on the sum asked as purchase money. Still there may be a shorter cut, a more royal road to farming, but we think the experience of journeymen mechanics, retired merchants, professional men, &c., who have tried these by-ways, fully justify the caution, "NOT SAFE TO TRAVEL," especially by those of small means.

DEATH OF A CALF BY CONVULSIONS.

Did you ever hear of the death of a calf from a fit? I had a beautiful Jersey heifer calf, about four weeks old. It had been taken from the cow at four days old, and learned to drink milk, from which part of the cream had been taken. It seemed to be doing well. I had hitched it out on a plot of grass several days, for a few hours at a time, which it seemed much to enjoy. I led it into the stable about six o'clock, apparently as well as ever, but it immediately began to be agitated and convulsed; to turn round and round; to jump, throw itself down, then up, then against anything that happened to be near, with great violence; to bellow, froth at the mouth, &c., &c. In this state it continued without change, only as its strength was gradually exhausted, till it died in about 30 minutes from the attack. I can hardly think that an animal dying of hydrophobia could suffer more. Have you any knowledge of such a case?

The cow had been out to pasture little more than a week, had been sick one day, five or six days before the calf died, from eating "Indian poke," as we had reason to believe. Could the calf's death be attributed to anything the cow had eaten? Now, Mr. Editor, I don't want you to *guess* about it, but if you or your readers *know* anything bearing upon my inquiry, please let us know it. E. T.

Mechanic Falls, Me., May 30, 1870.

REMARKS.—The death of this calf was caused by convulsions. Convulsions consist in violent involuntary contractions of the muscles; and when the muscles of respiration are so much affected as to render that function impossible, the subject dies. The cause of this muscular affection is a disturbance of the nervous system generally; and this may be caused by injuries of the head, or of the back; by a wound of one of the larger nerves; by overloading the stomach, and by taking poisons into the stomach. Sucking calves, pigs, lambs, and other little brutes, like "nursing" babies, are easily, and sometimes fatally affected by substances taken into the stomach of the mother. So much we "*know*"—we "do not *guess* about it;" but, in the absence of sufficient knowledge of the facts in this case to do any better, we must be allowed to make one "*guess:*"—We guess that the convulsions, of which this calf died, were caused by "Indian poke," or some other poison, eaten by the cow.

THE SEASON IN CANADA.

We have had a very dry spring. Work commenced rather later than usual, but the land was in prime condition, and seed was put in about as early as common, although there was much *croaking* about the "backward season." Fruit trees were in blossom a week or ten days earlier than last year, and vegetation generally was quite as forward as in several years past. But the severe drought of the last month, injured grass on old fields and grain on clay or gravelly soils. In forty-five days from the 25th of 4th month to 8th inst., inclusive, only *three-quarters of an inch* of rain fell in this vicinity. The weather was warm, and a part of the time hot. The 31st of last month the mercury rose to 82° in the shade, and to 90° the 4th of this month.

But the spell is broken. The 9th was showery, and the 10th it rained moderately, and quite heavy in the night. The ground is well watered now, and if rain continues to fall frequently, crops will yet be fair, though I think barley must be light.

The prospect for fruit is pretty good. The curculio is very abundant, and the currant worm is very destructive. Powdered White Hellebore is an antidote to the latter, but I neglected to apply it in season on some of my bushes. I put it in a pepper-box, and sprinkled it on the leaves. No matter whether it touches the worms or not, they will leave. I have never known any one poisoned by using currants from bushes that had been so treated.

A great many curculios have been caught here by jarring the trees, and it is found quite as necessary to jar them in the evening as in the morning. One of my neighbors has procured a prize of ten dollars, offered by the Canada Fruit Growers' Association for 1000 curculios. GRANITE.

Bloomfield, Ontario, 6th mo., 13th, 1870.

RIPTON, VT.

Ripton is a rough and stony town, situated up among the Green Mountains, which surround it on all sides, seeming to shut it out from the outer world. Still it can boast of no grand mountain scenery, picturesque views, &c., but it can truthfully claim a good soil, which, under a judicious system of cultivation, yields large returns. Many of its farmers now successfully compete with those of the fertile valley of Otter Creek, in amount of crops. The owners of these valley farms, however, give their attention entirely to farming, while with us a large portion of the farmers devote much attention in the winter season to lumbering and wood drawing; business which occupies their

thoughts and employs their labor, but instead of being a benefit to the town, is directly the reverse. They would, in my opinion, make much more money in taking good care of their stock and getting their year's supply of wood, which too many of them, in consequence of engaging in lumbering, neglect. But a new interest has been awakened in farming. Many are cultivating their land better, keeping better stock and raising better crops, and are thus adding much to the real wealth of the town. Mowing machines and horse rakes are being introduced, which, although the land is somewhat rough and uneven, are doing good work; and, in short, a great change is going on in all the departments of agriculture. Farmers are laying aside their old ways and adopting better, which may be attributed partly to the NEW ENGLAND FARMER and other agricultural papers. The FARMER is a welcome Weekly visitor in my father's family, where it is highly prized. It is also taken considerably throughout the town. C. E. G.

Ripton, Vt., 1870.

"LEARNING TO SPELL."

The brief remarks on this subject, in a recent number of the FARMER, were timely, especially those relating to the influence of some of the comic writers of the present day. What the influence of such orthography must be, unless sedulously counteracted by parents and teachers, no one can doubt. Now, if ever, the guardians of the young should see that this branch of education receives due attention.

It is a good plan for children to write the words of their spelling lessons, and also to be in the frequent habit of writing letters and compositions; for many who are fair oral spellers are, in writing, as likely as not to misspell every word in which a mistake can possibly be made. But in order to do this, they must learn to write much earlier than they usually do. Indeed I know no reason why children should not commence writing when they enter school. It would take up their time and attention, and be a pleasant change from the inevitable picture drawing with which they contive to while away so many of the tedious hours. Besides, they would feel that they were doing something useful; a very pleasant thought to most children, let us remember, whether at home or at school.

It would be quite an improvement in many schools if the pupils were required to pronounce each syllable as it is spelled, instead of running through the entire word before stopping. This has been strangely neglected of late years, and it is quite time to return to the former practice.

But our schools, however long continued and expensive they may be, do not obviate the necessity of home instruction, in the elementary branches at least. This alone can restore that individuality which is in a measure lost in the class system. Parents who are interested in the progress of their children, may find abundant opportunity of facilitating that progress, without the formality of set lessons. In spelling, especially, the chances for instruction are constantly recurring. Children should learn to spell the names of every house and farm utensil, of every tree, shrub and flower which they see; of animals, of ordinary diseases, and so on, *ad infinitum*. There are also many little words in common use which should receive special attention, as they are very liable to be misspelled in hasty writing. MATTIE.

KING BIRDS DO DESTROY BEES.

I noticed some time ago quite a discussion by the New York American Institute Farmers' Club, on the question, "Do king birds kill honey bees?" This question was decided in the negative by the combined wisdom of the learned Doctors of that Club.

I have since had occasion to doubt the truth of that decision. Watching a swarm of bees a few days since, my attention was called to the peculiar movements of one of these birds in the immediate vicinity, and by careful observation, I was convinced that he was there for the very purpose of catching the workers as they returned to the hive, loaded with honey, and also that he was succeeding at the business very finely. A few days since, Mr. P. E. Grow of this place, shot a king bird which was flitting about among his swarms, and upon dissecting him, found ten of the bees in his stomach. Now if king birds don't eat bees, how came bees there? J. J. WASHBURN.

Randolph, Vt., June 13, 1870.

CRANBERRY WORM.

Several lovers of the cranberry in this vicinity will be much indebted to the FARMER for a remedy to destroy the worm or maggot that infests our cranberries. A FARMER'S DAUGHTER.

South Berwick, Me., June 12, 1870.

REMARKS.—We know of no practicable method of destroying these worms, except by flowage. When these worms make their appearance they are destroyed by letting on the water for a few hours. But as this is impracticable in many cases, we hope the request of "A Farmer's Daughter" will be responded to by any one who can furnish the desired information.

REMEDIES FOR THE CABBAGE WORM.

Last season I raised quite a large quantity of cabbages, but as they commenced to head nicely, the cabbage worm commenced its destructive work. Having some air slacked lime on hand, I concluded to give it a trial. I sprinkled it on to the cabbages while the dew was on in the morning and it proved successful in destroying the worm. The worms were soon lying around on the ground dead, and they seemed to turn to a whitish color. The lime does not injure the cabbage, and I hope it will prove as complete a remedy with Mr. Sowles and others as with me. J. B. HOLTON.

West Charleston, Vt., June 13, 1870.

In reply to a request in the FARMER for information about destroying worms on cabbages, I will say that last year they were very numerous on my cabbages and almost destroyed them before I did anything. I then turned on each head about one pint of water once in three days, and at the same time sprinkled it over with black pepper. It drove them all off, and my cabbages headed and did well. N. HALL.

Canaan, Me., June 11, 1870.

A PRECOCIOUS APPLE-TREE SPROUT.

Two years ago, while cultivating corn, I broke down one of my apple trees. From its roots a sprout has grown in two years which is one and a half inches in diameter at the but, five feet in height, and this spring it had several blossoms. Can you or any reader of the FARMER tell me how to destroy apple-tree worms? HIRAM NORTON.

Addison, Vt., May 28, 1870.

CAUSE OF DRY ROT IN POTATOES.

I have made some inquiries as to the cause of the dry rot in potatoes in cellars this winter. I found two persons who were not troubled with it, while their neighbors who raised the same varieties of potatoes, were losing theirs. Both of these

persons kept a cellar window open to air their cellars and to keep them cool; shutting them only in coldest weather, when there was danger of freezing. So I concluded that too warm cellars and bad air have much to do about rotting potatoes. If this is the cause thousands upon thousands of bushels of potatoes might have been saved this winter. One person says the cellar to keep potatoes must be dark, cool and well ventilated. I hope others will inquire into the cause and give us their conclusions. B. LIVERMORE.

Enfield Centre, N. H., April 10, 1870.

TO KEEP CROWS FROM CORN.

The recommendation in the FARMER of lines to keep crows from corn-fields, reminds me of my experience with them crossed all ways; also, with images, old boots, shingles, strips of white cloth, paper on rocks, &c., all of which have proved to be useless with me. The best thing I ever tried was to take into the field an empty barrel, a spoonful of powder, a piece of paper and a match. Place the paper on the ground, pour the powder on the paper, covering most of it with dry dirt, light the paper as a slow match, invert the barrel over the powder, and hold it till about two minutes after the flash, then right up the barrel, and it will give off a stench for a week or two that is so offensive to the corn pullers that they will keep their distance. SCRIBBLER OF THE BUSH AND BRIER.

Milford, N. H., June 1, 1870.

KILLING APPLE TREE WORMS.

I kill them in an old-fashioned, but a very good way, and as they are more than usually plenty this season, a description of it may be of use to some one. Take a pole suited to the height of your trees, tie a small swab on the small end and saturate the swab with water to prevent burning. Then dip the swab in spirits of turpentine, or alcohol will do, if you can get such as will burn, (?) touch the swab to some live coals or match, and apply it to the nest. If those that are not killed gather and spin a new web, apply again. It will cost but a few cents, and, if you have no better way, try it and save your fruit. C. B. FISK.

Brookfield, Vt., June 4th, 1870.

CURRANT WORMS.

By sprinkling my bushes twice with an ordinary waterpot, one table spoonful of White Hellebore to a gallon of water, I have killed all the worms on my bushes, which are now looking finely. On a row of currants ten rods long I used half a pound of the Hellebore, which can be obtained of any druggist. JOHN WAYLAND.

Stoughton, Mass, June 3, 1870.

MARKETING WOOL---WOOL HOUSES.

For five or six years past commission houses have secured the handling and sale of a large proportion of the wool clip of the country. The theory upon which they claim to do business is a good one. They claim that by aggregating the clips of large districts in one city, or one house, buyers are more certainly attracted; and that by assorting the farmers' wool into the several grades sought by different manufacturers, and also by keeping it uniform as to condition, a better price can be obtained for it, than the grower can hope to get at home. A very fair basis for an honest business, as any one will readily admit; but somehow or other the wool houses have become unpopular with wool growers. They find that manufacturers, who generally are shrewd business men, have taken advantage of the opportunity, and dropped into these wool houses about once a month, and sometimes oftener, and bought their stocks in small installments, instead of taking a year's supply at once, as formerly, thus in reality forcing the growers to carry the manufacturers' raw material until such time as the latter was ready to pay for it and work it up. No one could find fault with either the manufacturer or middle-man for this; for the former was only doing what any business man would do—using all honest means to make his business profitable—and the latter could not rightfully be blamed for not selling wool faster than buyers would take it. But the result was that the grower generally waited for his money from three to nine months—and then was called upon to pay a neat little bill for storage, insurance, &c., into the bargain.

Other facts tended to render the wool commission houses unpopular with their consignors. Prominent among these is the rule of making time sales. From one to four months' time is generally given, without interest. These time sales require the grower not only to carry the raw material until the manufacturer is ready to use it, but until he has had nearly or quite time sufficient in which to place his goods upon the market and get his pay for them. This feature we deem a fault of the commission men; for until wool houses became so numerous, manufacturers, as far as our information goes, never asked for or expected credit in purchasing their raw material. It is a concession begotten of competition among commission houses, rather than of the necessities of the manufacturer; is an unnecessary hardship upon the grower, and should be discountenanced by such men and firms as wish to be considered as acting in the interests of the producer. We think the experience of a majority of wool-growers is that they are better satisfied with the sales they make themselves, than those made for them by others. This is natural—and herein wool-growers are in no wise different from other folks. Our advice to our correspondents, and others seeking like information, is to put their wools into the best condition possible under the circumstances. If they have a really good chance to wash it, and then can keep it from dust till shorn, we would say *wash* it! If you cannot do it just right, shear it without washing. Put it up well and honestly; pile it in a clean, dry place in the barn or some out-house, and wait awhile for a buyer, keeping yourself well informed the mean time as to the wool and the woolen goods market, so as not to be "caught napping" by a buyer when one comes round. If you need money, and really want to sell when you get a fair offer, take it.

Our advice would be to ship to no man or

house who speculates in wool. The temptation to buy the customer's wool before a rise, and pocket the advance, is greater than a speculator should undergo. When once your property is in the hands of a commission man, make up your mind to be satisfied with the result. There may be obstacles in the way of good sales, that no business tact or ingenuity can surmount. If he does well for you, and you are satisfied, say so. If, on the other hand, you are convinced that your interests have been made subservient to some other man's, let him alone in the future, and see that your friends adopt the same course.

The rapidity with which wool commission houses have sprung up in all our large cities, very clearly indicates that there is money in the business, and may well warrant growers in asking themselves if it is not costing them more to sell their wool than it ought to. Eastern houses charge two and a half to three cents per pound for selling wool, and Western, we believe, invariably charge two cents per pound. Let us work and wait for "the good time coming" when a woolen mill in every county, will furnish the grower of wool a reliable and profitable market at his own door, free from the drawback of six to ten per cent. as commission for effecting sales.—*A. M. Garland, in Western Rural.*

THE AMERICAN IMPROVED SUGAR BEET.

It will be remembered that some weeks since, the Hon. Henry Lane of Orwell, Vt., in reply to inquiries for further information in relation to this variety of the sugar beet, referred to his address to be published in the "Transactions of the Vermont Dairymen's Association," for a full statement of its origin in his neighborhood, and of his opinion of its qualities. We, therefore, make the following extracts from his address:—

When Merino sheep were considered more valuable than they are at present, sheep breeders in Addison county very generally adopted the practice of having their lambs dropped in March, thus requiring, besides hay for the ewes, extra feed for two months before coming to grass. By actual experience we found that no food would produce as great a flow of rich milk, or milk that would grow a lamb as fast as the sugar beet. We first raised the Silesian and the white French sugar beet. These varieties grow almost entirely in the ground, and of medium size. In order to produce a good yield the drills and the plants in the drill must be at about the same distance apart, requiring nearly the same labor in their culture as the carrot, and their weight and food-product per acre was far below an ordinary crop of the variety now raised. The two beets I have placed on the table, weighing 10 and six pounds respectively, are specimens of the variety now raised in Addison county, this having almost entirely superseded the old varieties.

In 1858, I received from the Agricultural Department at Washington seeds of three varieties of the sugar beet, and two of mangolds. These seeds I sowed separately, gave them good culture, and watched their growth with much interest. At harvesting the crop, the variety sent to me with the name, "*The American Improved Imperial Sugar Beet*," filled my idea of a good beet to raise for stock feeding. The shape of the root, size, yield and quality, I thought was all that could be desired in this root. All that I raised that season of this variety were carefully saved for seed, and set out the following spring. From the seed thus raised I sowed, and furnished my neighbors seed, to sow side by side with the Silesian and white French varieties. After various trials the old varieties were discarded, and this has come into general cultivation. This is the only variety now raised in Cornwall and vicinity. It is such a decided favorite that I have often heard farmers say, that they would rather pay five dollars per pound for seed of this variety to sow, than to raise the common varieties, even if the seed were given them.

The cheapness with which they can be raised, and the large amount of healthy, nutritious food raised to the acre, have brought this beet into general use, almost every farmer raising his cellar full of sugar beets to feed, and hundreds of bushels are sold yearly in Middlebury village. Every man keeping a cow wants a load or more of beets to feed during the fall, winter and spring. By great care in selecting for seed, beets that were of uniform shape, fair size, well developed, without forks or lateral roots, and good culture, this beet has been very much improved since its first introduction into Addison county. Yielding, as the root does, with great certainty, a greater amount of food per acre than any other, at less cost, of better quality than the turnip, nearly as good as the carrot for young stock, and better for milk, ready to feed by the first or middle of October, keeping sound through the winter until late in the spring, this root is growing rapidly into favor and general use. Cattle, sheep and swine feed greedily upon it with favorable results in their health and condition. Thus far its cultivation has been attended with very satisfactory results.

—A writer from Brazil says that you will see no potatoes, no corn, no fields of grain or grass about Rio. The butter used nearly all comes from England, as well as cheese, the flour from the United States, the potatoes mostly from England. Meats, rather than vegetables are the table staples. Rice is used in the place of potatoes.

[Entered according to Act of Congress, in the year 1870, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

RURAL ARCHITECTURE.

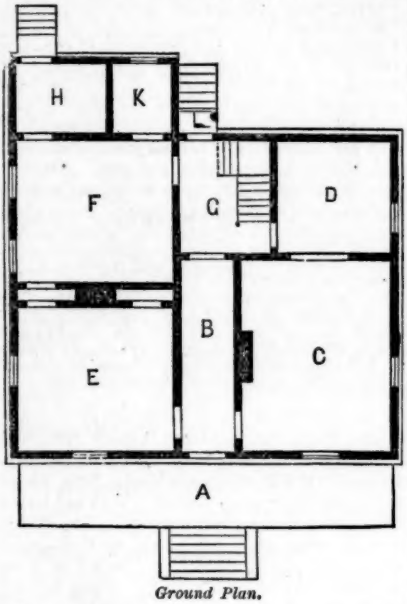
BY GEO. E. HARNEY, Cold Spring, N. Y.

DESIGNED AND ENGRAVED EXPRESSLY FOR THE NEW ENGLAND FARMER.

No. 4.---A PLAIN TWO-STORY HOUSE.

This is a design for a very plain, simple and economical house, containing eight good sized rooms, four in each story, with a low garret under the roof and a good cellar under the whole house. The entrance is in the centre of the front, by a veranda marked A, which extends across the whole width of the house. The house is raised up about five feet, and is surrounded by a banking. The entry B, is five feet wide, and on the right is a pleasant parlor C, which measures fourteen by eighteen. Opening out of it by double doors is a room D, ten feet by ten and a half, designed as a library, to be used in connection with the parlor whenever desirable. This makes virtually one room twenty-eight feet long, an arrangement very well adapted for entertainments. E is a dining-room fourteen feet square, and F, a kitchen thirteen by fourteen. They are connected by a small passage at the side of the chimney, and on the other side of the chimney is a china closet for the dining-

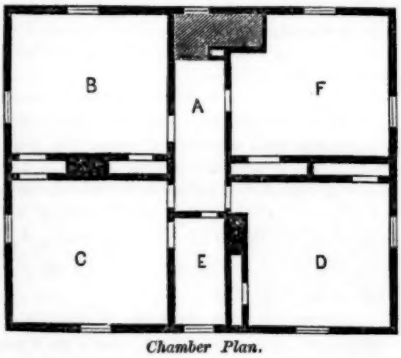
room. At G, the staircase is located—in a central position and convenient to the whole house, yet sufficiently retired for private use. A door leads to the yard at L. H is a large



Ground Plan.

pantry or wash-room opening from the kitchen and having communication with the yard. K is a large store closet.

In the second story the head of the staircase leads to a hall five feet wide, and from this hall open the several rooms. They are all the



Chamber Plan.

same size—thirteen by fourteen—and each one has a closet attached; the small room E, over the front of the hall, is a dressing-room belonging to the chamber C.

This house is designed to be built of frame, boarded and clapboarded on the outside, and the roof covered with shingles. The dimensions of the main part are thirty by thirty-five feet on the outside of the frame, and the small rooms H and K are in a one-story leanto. The stories are nine and a half feet high. The cellar has a stone wall up to the top of the banking, and above that, a brick underpinning, which should be painted some dark color corresponding with the darkest color of the trimmings of the house. The inside finish is of the plainest description.

This house may be built for $3500.

Club-foot in Cabbages.—A. G. Peabody, Machias, Me., writes to the New York Farmers' Club, that Club-foot is caused by worms which devour the small fibers of the root of the cabbage plant. These worms come from eggs which are laid at the point where the plant touches the ground, just beneath the surface of the earth, by a fly like the house-fly. Any one, by scraping away the earth a week after the plant is set, can see the eggs. A sure remedy is to put a tablespoonful of air-slaked lime around the cabbage plant when it is set out, and cover it with a quarter of an inch of pulverized earth. The fly lays the egg in the lime, and the egg, being moist, absorbs the lime and is killed. If the worm is once hatched it dives into the ground, and is then out of reach of any remedy.

Mr. R. G. Kimer, Penn Yan, writes:—I never fail in cabbage. My plan is to set the plants in a hollow, such as a wash-bowl pressed in soft earth would make; give them good cultivation, and keep the soil in the same shape, always dishing around the plant. My reason—the stalk of the plant will be shaded, the top will conform to the shape of the place where the plant is set, the leaves being upright, the more readily conveying the dew directly to the roots, thus supplying itself with moisture daily.

Keeping Hams and Bacon for Summer Use.—I give you the method which my wife adopted several years ago, and which I find to be the best I ever saw tried, viz:—Cut the ham in slices of proper thickness, fry it just enough to get the moisture out of the lean, (or about half cooked,) then lay the slices into a stone crock and pour the fat over it which has been fried out; add enough melted lard to cover the meat and set away in a cool cellar, keeping it covered. Take it out as wanted and finish cooking. This method may not be new to many of your readers, or perhaps most of them know of better methods.—*D. B. Cornell, in Country Gentleman.*

SELECTING SEED WHEAT.

Mr. Fruit tells, in the *Prairie Farmer*, how he obtained the "Early May" wheat, a very good variety, equal to any, even that which is being advertised at a dollar a pint by the seedsmen.

Being in a wheat field at harvest time, he noticed some heads that appeared riper and sounder than the rest, and got leave to go among the standing grain and select such heads as he chose. He soon made a collection of heads, riper, sounder and better developed than the mass of grain in the field. This he sowed, and has produced what seems to be a new variety of fine, heavy early wheat, which he warrants with fair treatment to yield from twenty-five to thirty bushels to the acre.

This reminds us of a story that is told of the Chinese emperor who, noticing a stalk of wheat growing in a field, taller and riper than the rest of the field, caused it to be gathered and planted, and its produce cultivated. He thus introduced a finer variety than had hitherto been grown in China, greatly to the advantage of his people.

These instances simply show the advantage of selecting good seed, a matter that receives much less attention than it deserves, and is as applicable to all other grains as to wheat.

When wheat is cultivated in the drill it is easy to go through the field and select the ripest, largest and soundest heads. A few quarts of such seed, carefully preserved and cultivated—as of course it would be—would soon produce a marked effect in any neighborhood. Any farmer who will follow this practice of gathering the best heads in his field would soon make for himself the reputation of having the best seed wheat in his neighborhood, which would be a small fortune for him, and the influence of his example would render him a public benefactor.

The practice of selecting the best ears of corn for seed, which has long been pursued by New England farmers, is doubtless one reason why the corn crop in our less favorable climate and soil equals or even surpasses the average crops of the corn States at the West, where they dip into the corn bin and use the average corn for seed.

The time for selecting the best heads of wheat is now close at hand. How many farmers this season will devote a few hours to selecting the best heads of wheat for seed the next year?

Cheese Factories in Michigan.—In giving an account of a visit to a cheese factory in Farmington, Oakland county, the editor of the *Michigan Farmer* says, it is the first institution of the kind established in that part of the State. Milk is delivered at the factory night and morning,—the practice of delivering it only in the morning having proved unsatisfactory. About 2300 pounds of milk are received daily, and one pound of cheese is produced for each ten pounds of milk. A branch factory has been established near by, and another has been built in North Farmington. From a personal acquaintance with the farms of this section when they were more than thirty years newer than they are now, we agree with the remark of the editor that "there is no good reason why the very best of cheese cannot be made in Oakland County, Mich., as well as in Chautauqua or Herkimer, N. Y." The same remark might be made of many other counties in many other western States.

The Wire Worm.—There is much complaint this season of the wire worm destroying the corn. Especially is this true in the West. Some whole fields, especially where the soil is black and rather moist, are almost entirely destroyed. The experience of many years has taught us that a small quantity of plaster dropped into the hill with the seed corn is an effectual remedy. It may be used also in the following manner, when it becomes as effectual against the crows as against the worms: Soak the corn a few hours in water, then drain off the water and stir in dry plaster until every kernel is coated with it. The crows do not like plastered corn, and will soon leave it. Plaster also is as effectual in keeping the wire worm from potatoes. They are apt to attack potatoes in moist soil. A small handful of plaster in the hill will ensure smooth-skinned potatoes, free from the scarifications of the cut worm. The remedy is simple, cheap and effectual.

Cornell University.—This institution seems to be popular with the wealthy men of New York, perhaps on the principle that to those who have shall be given. Hon. William Kelley of Rinebeck, and two other good friends, as we learn by the *Ithaca Journal*, have given it $42,000 in cash. This will be applied to the library. Mr. Gerrett Smith has also made a very handsome gift of scientific works to the University.

Hereford Crosses.—A few weeks since our cattle market reporter noticed a superior lot of steers raised by Mr. F. W. Stone, of Guelph, Ontario, and sold at Cambridge by Mr. J. C. Hamilton. A correspondent of the *Country Gentleman* who saw them at home, but after they had been sold,

says that the Hereford cross on grade and common cattle is becoming very popular. Mr. Stone informed him that the butchers are always glad to get these grades at extra prices. They have very thick backs, and their flesh is firm and rich-flavored. Those at Cambridge were sold at the highest price paid that week for any cattle, to W. E. Gowing, and we understand that their offal was only 28 per cent. of live weight.

SALE OF PERCHERON HORSES.—At the late sale by the Massachusetts Society for the Promotion of Agriculture, at the Buzzy Farm in West Roxbury, the following stock was disposed of by auction:—

Stallion Orleans, 10 years old, imported in 1864 by the Society, for $700 to A. H. Seabury of New Bedford; stallion Napoleon, 5 years, old, for $1000 to W. A. Woodsworth of Boston; imported mare Empress, 10 years old, in foal to Napoleon, for $630 to Francis Dame of Boston; a three-year-old filly, from Empress by Orleans, for $450 to the same; a 2-year-old, filly out of Empress by Conqueror, for $380 to the Society; the mare Sultana, in foal to Orleans, for $110 to J. H. Stone of Boston; a yearling filly, out of Sultana by Napoleon, for $360 to S. Boyd of Boston, and a gray mare by Conqueror, owned by Mr. T. J. Coolidge, for $500 to Dr. Burnett.

AGRICULTURAL ITEMS.

—The State of Maine still owns 768,481 acres of "settling and timber lands."

—One load of grain, amounting to 100,000 bushels, was sent down the Mississippi from Dubuque, Iowa, the other day.

—Washington Territory boasts of an immense cranberry marsh, yielding one hundred thousand bushels in a single crop.

—A correspondent of the *Prairie Farmer*, who kept his hogs on floored pens, cured a habit they got into of biting each other by feeding them "stove coal."

—It is estimated that one-fifth of the meat supply of Paris is veal. At the commencement of the present century the price of veal was half a franc a pound; it is now three times as much, or one and a half franc.

—F. Copeland, of West Dedham, Mass., sowed a "liberal" mixture of two parts of lime and one of salt on a cultivated field filled with sorrel, and has also used it on a mowing field, and completely killed out the sorrel.

—The Commissioner of Agriculture has prepared for publication a valuable work on the Pleuro Pneumonia, or cattle disease, to be illustrated with miro photographic illustrations of the diseased parts of the animals.

—At a late meeting of the Lexington, Ky., Farmers' Club, Dr. Spurr said he had noticed recently that his hogs were getting sick, and from circumstances, he is convinced that their sickness was caused by sleeping in wet straw. He divided the herd, placing some of them in a distant lot where they could make beds in dry ricks of straw, and they are now healthy and vigorous. Dry dust and chaff about the stables are about as injurious to hogs as is the wet straw.

—To make a mare own her colt, J. L., in the *Rural New Yorker*, says:—"Take some milk from the mare and rub it on the colt's nose; then let the mare smell it, and she will own her colt at once."

—An item recommending bells on sheep as a protection from dogs, is met by the *Ohio Farmer* with the remark, a neighbor of ours had his sheep chased by dogs when five or six cow bells were borne by the flock.

—The California *Farmer*, "to show what our climate is for sheep raising," says a new thing among sheepmen is reported from Mercer County. A flock of 1300 grade Cotswold lambs, dropped in January and February, have been sheared, yielding an average of 2¼ pounds, some few gave 5 pounds.

—The *Northwestern Farmer* says that John Tomlinson, Esq., of Shelby Co., Indiana, fatted $1,200 worth of pork on potatoes last fall, and pronounces potatoes a cheaper food for hogs than corn. He cooked his potatoes, and the hogs were exceedingly fond of them. It is well known that the potato is rich in starch, and that is the chief element of fat. New England farmers discovered the value of potatoes for fattening hogs long ago.

—H. I. Kimball, Esq., of Atlanta, Ga., has offered to place in the hands of B. C. Yancy, President of the Georgia State Agricultural Society one thousand dollars to be used as special premiums as follows:—$500 for the largest and best yield of cotton on five acres; two hundred for the best wheat crop, and two hundred for the best grass crop, both on five acres; and one hundred for the best collection of mineral from Georgia soil.

—At a recent meeting of the American Institute Farmers' Club, N. Y., Clarkson Tabor, of New York city, in reply to a correspondent calling for the heaviest beef ever killed, said: "Reunion," sent here in 1866, and fattened by T. H. Tripp, of Dutchess county, weighed 3,795 pounds, and dressed 2,575 pounds. I have been nine years in the live stock market, and I never saw a larger animal, and there is no tradition of a heavier one among our New York cattle dealers."

—The members of a Farmers' Club in Madison County, Ill., took the agricultural statistics of sixteen sections of one town, comprising 10,240 acres. On this land there were 1783 acres of corn, with an average yield of a little less than 37 bushels per acre; 3290 acres of fall wheat, producing nearly 17 bushels per acre. The average yield of oats was a little less than 40 bushels; Irish potatoes nearly 100 bushels; hay one and a half tons. There were over 10,000 apple trees, producing less than one bushel each. There were only 188 milch

cows and 273 sheep on the whole tract, while 2815 hogs were reported. There were 52,618 rods of fence.

—A correspondent of the *Maine Farmer* says that in sowing grain, we commence at one corner of the piece of land that is to be sown, step off three paces, stick up a stake, sow across the piece, step off three paces, set down the pail or basket, step off three more and stick another stake, shift hands and sow back and forward in this manner. If the ground is mellow we can keep our distance by the tracks. Always throw the grain with the wind and down hill if we can.

—A correspondent of the English *Journal of Horticulture* says that he has never found any covering for small seeds equal to short grass mown from the lawn. This is strewn over the seeds to about half an inch in depth, and then the usual watering is given. It soon shrivels and becomes light, so that the plants come through it freely. The birds never attack them, and the crops never fail.

—At a late discussion on making hay, by the Herkimer County, N. Y., Farmers' Club, Mr. Burdick asked if a poorer quality of hay had not been made since the introduction of the mowing machine, up to the time of the introduction of the tedder. The members were decided in their opinion that such was the case. They all believed that the hay, as it lay after being cut by the machine, did not cure as well as when cut by the hand scythe and spread with a fork. Hence they all considered the tedder indispensable where the mowing machine is used.

EXTRACTS AND REPLIES.

CROPS IN PENOBSCOT COUNTY, ME.—NEW YORK FRUIT TREES.

The crops in this section are looking finely. Grain and grass are about ten days ahead of their usual time. Wheat did well with us the past year, and this spring there was an unusual breadth sown. Our fruit in bloom promised greatly, but the heat of the first few days of this month has caused a bad blight.

There have been some agents here from Rochester, New York, with fruit trees, or rather soliciting orders for them. I wish to ask if such trees will be hardy here? There is a great difference in climate between western New York and Eastern Maine. These agents are obtaining many orders for trees, but I am afraid that we shall be the losers.

Springfield, Me., June 15, 1870. East Maine.

Remarks.—The success or failure of Western New York trees will depend largely on the manner in which the trees have been grown, dug, packed and transported, and on the care with with which they are planted and tended. There have been many complaints of trees from this section failing to grow and failing to prove true to name. We should prefer trees raised nearer home, and by those more directly responsible to the buyer. And it would seem that the success of tree peddlers in disposing of stock produced at so great a distance ought to induce people in places where they are sold to supply the home market. Inferior stock is often disposed of by irresponsible peddlers.

GRASSHOPPERS, WHERE DO THEY COME FROM?

Noticing, recently, the small white clusters upon the grass, looking much like spittle, and often called here, and by some supposed to be, "snake spittle," a friend called my attention to the fact, as he maintains, that each one of these clusters contain an embryo grasshopper. To verify his statement, he took several of them in his hand, and opened them, and disclosed the insect to view, which was apparently a young grasshopper. This may be new to some of your readers, as it was to me, and if true, grasshoppers will be plenty in Vermont soon. These clusters have been thought to be poisonous to cattle. If this view of the origin of this insect is correct, I would like to learn more about it. Prof. Agassiz, I saw it stated, once lectured for an hour on this subject. I wish he or some one would tell the readers of the Farmer all about the matter. B.

Essex, Vt., June 21, 1870.

Remarks.—Though all troubles may not spring from the ground, most of our varieties of grasshoppers do, being hatched from eggs deposited there by the mother insect. A few, however, lay their eggs, like the canker-worm grub and caterpillar, on the twigs and branches of trees. But these foaming fellows are not grasshoppers in the ordinary sense of that word. Here is a picture of one

of these chaps. There are at least three varieties in Massachusetts. Some of the books call them *Aphrophora*, which being translated means spume-bearers. Within a few years past this class of insects have multiplied alarmingly in some parts of New England, and seriously injured the hay crop. We know of no subject better worthy of an hour's lecture than that of these snake-spittle, frog-spittle, frothy, spumiferous pests.

ORCHARD, WITCH, R. I. BENT, AND KENTUCKY BLUE GRASSES.

Will you please to inform me what Orchard grass is? Is it called by some Witch grass, or Quack grass? And how will it compare with Herdsgrass as to value for feed? Would it be a good kind of grass to seed land to that you intended to use for pasture? What is Rhode Island Bent grass and Kentucky Blue grass? How do they look when growing, and what kind of a head do they have as to shape? How do they compare with Herdsgrass and Redtop for pasture feed? Geo. C. Bidwell.

Rockingham, Vt., 1870.

I wish to know if Orchard grass makes good hay for sheep. I have some that has come up in bunches about my farm. It grows quite rank and coarse, being about a foot taller than the other grasses; it is early, being full in the blow the fifteenth of June. Is it good to sow with clover? What kind of a sward does it form? Is it bad to plough and cultivate when we want to plough it up? I should think by the way it works in, it would not run out very easily. C. F. Lincoln.

Woodstock, Vt., June 20, 1870.

I have noticed Rhode Island Bent grass seed quoted in your price list. Please inform me as to

its use; where and when should it be used? Will it take the place of herdsgrass? Herds grass seed is so scarce and high that a substitute is desirable.

Newbury, Vt., 1870. READER.

ORCHARD GRASS.

Enclosed you will find a specimen of grass that appears to be working into my fields. Can you give me its name, and something about its value and character? N. C. LUTHER.

Attleboro', Mass., June 21, 1870.

REMARKS.—This is the Orchard Grass, or Rough Cock's Foot—*Dactylis glomerata*. The above illustration is copied by permission from *Flint's Grasses and Forage Crops*, a book that ought to be in the library of every Farmers' Club at least. We also copy from this work the following description of the Orchard Grass: Flowers in dense clusters; stem erect, about three feet high, in good soil sometimes five feet; leaves linear, flat, dark green, rough on both surfaces, which, with the fancied resemblance of its clusters to the foot of a barn-yard fowl, have given it the common name in England of Rough Cock's-Foot. Root perennial. Flowers in June and July.

Mr. Flint says it makes an admirable mixture with clover, as it blossoms about the same time that the red clover does, but on account of its early ripening it should not be mixed with herds-grass or redtop. A Pennsylvania correspondent of the *Country Gentleman* sowed about four acres with orchard grass, clover and timothy. The first year the new grass made a small appearance, the others took well and he had a good crop. The second year there was a good deal of orchard grass mixed with the others, but it was hard and wiry before the clover and timothy were fit to cut. The third year the orchard grass was ripe long before the other grass was fit to cut, and the crop was unsatisfactory, the seed was disseminated in other fields by the manure, where it was standing in bunches, and the writer said he should be glad to be rid of it entirely. This shows the importance of understanding its habits and character, and of proper management.

Another correspondent seeded eight acres of pasture with orchard grass, redtop and timothy. The orchard grass was two weeks ahead of the other, but he had a fine pasture.

Mr. A. B. Allen of New York has had thirty years' experience with orchard grass. He says it should be sown *entirely alone*, on clean ground, in good tilth, and so heavily that it will occupy every inch of the soil. Then no grass will pay better, either as pasture or for hay. But for hay it must be cut in early bloom. It makes the earliest and latest pasture, and is the most enduring grass he knows.

Some farmers in Kentucky claim that eighty acres well set in orchard grass, and divided into three lots, will feed more cattle than one hundred acres of the best blue grass. Sometimes when the weather is warm and rainy it grows in Kentucky nearly or quite two inches in twenty-four hours.

Mr. X. A. Willard says in the *Rural New Yorker* that "wherever we have seen orchard grass it has given abundant satisfaction. A few years ago we saw on the farm of A. A. Mather, Esq., Burlington, N. Y., seven acres that had been down four years, having been seeded at the rate of two and one-half bushels per acre. The average yield for the four years was stated by Mr. M. at fully four tons to the acre, two crops being taken each year. It stands the drought well." He also suggests its use where daisies abound, as it ripens early, and grows so luxuriantly as to crowd them out.

The *Practical Farmer* says, "an orchard grass sod on being ploughed up is always found to be black and rich. It is a meliorater and improver of the soil."

A field sown with it more than twenty years ago, and which we see every summer, still yields a fair crop of this grass. All stock like it. Sheep, it is said, will pass over every other grass to feed upon it.

The seed weighs only twelve or fourteen pounds per bushel. Early in the spring is considered the best time to seed.

The Rhode Island Bent grass we suppose to be the common redtop of our fields and pastures. If so, our correspondent can judge of the propriety of using it instead of herdsgrass.

The Kentucky blue grass is regarded by Mr. Flint as identical with our June grass; the difference between its growth and popularity in the two sections being in the soil and climate.

TALL MEADOW OAT GRASS.

The bunch of grass left at our office last week by C. Clark, Esq., of Stoughton, Mass., is the Meadow Oat Grass, or Tall Oat Grass, described and figured on pages 127 and 128 of Mr. Flint's "Grasses and Forage Plants." It is the Ray grass of France. It is often found on the borders of fields, woods and pastures. After being mown it shoots up a very thick aftermath. It is of an early and luxuriant growth, and has been recommended for soiling. It has been cultivated to some extent in New England, and when once naturalized it grows spontaneously on deep sandy soils.

CANADA AND THE STATES.

It is some time since I have written anything for the FARMER, but being in this place on a visit for a few days, and always feeling interested in agricultural matters, and enjoying much the writings of others in the FARMER, I have thought I would just write a few lines, not that I expect to do that justice to its pages that many of my superiors can.

I left home in Eaton, Compton Co., Canada East, last Wednesday. Our season there, after a very mild winter, was, through the months of April and May, very dry, and most of the time cold. After this month commenced the weather became quite warm, but still so dry that we began to fear that there would be a short crop for the husbandman. But on the night of the seventh it commenced to rain, which so refreshed the earth that all agricultural crops bid fair to be as good as the farmer can expect, except the hay crop; that must be far below an average, not altogether in consequence of the drought, but more from the effects of the thaws and sudden changes of the winter, which caused much grass to be winter killed, especially on our richest or most valuable land. Since the rain, the weather has been more or less cloudy and cool. Our season is about two weeks earlier than usual. The state of the crops, as noticed on my way here, as well as at this place, is much the same as in Compton county, Canada, which is some eighty miles further north.

This town, Lunenburg, is said to be one of the most stony towns in the State, but the soil seems to be very strong, and produces bountiful crops of grass and all kinds of English grain. It has been settled about 100 years, and yet retains many of the names and descendants of its first settlers, who seem to be wedded to the land that gave them birth. It is an agricultural town in every sense. Cattle and horses, potatoes for starch, and butter are its chief products for market, and its people seem contented and happy. The scenery here is most grand, lying as it does on the west side of Connecticut river, and extending back in high ridges of land. These high hills are cultivated to the very tops, and from them is seen the valley of the river, and at the southeast the principal peaks of the White Mountains stand out in all their grandeur and beauty, and the snow that still remains on them gives them a cold yet bright and dazzling appearance.

I must say, Mr. Editor, that I like the country of my birth much better than this section, and I sometimes think it quite strange that people will settle on such rough and stony land as some parts of these New England States are made up of, when such fine, easily cultivated land can be obtained in the section of Canada where I reside. I have travelled considerable in different parts of New England, but I have never yet seen any part of it that will, in my estimation, compare with that section of Canada East, contained in the counties of Stanstead and Compton. And I think now, notwithstanding the duties that we have to pay to sell our stock to American buyers, with the less amount of taxes we have to pay, and with our superior farming land we can make and save more money than our American neighbors. If any unprejudiced person will pass from New Hampshire or Vermont into the counties above mentioned, I think they will see quite as much thrift and more taste than in their own States.

I have written the above without any desire to injure the feelings or prejudice the minds of any. I have always been a friend of the people of the United States, for I believe their prosperity enhances ours, and *vice versa*. HIRAM FRENCH.

Lunenburg, Vt., June 13, 1870.

PICKING PEARS.

The "Flemish Beauty" is the variety best adapted to this climate, and I think it is the only one that is perfectly hardy. It stands our cold winters as well as an apple tree. It is a great bearer, grows large, and is good for the table, and *very* good for cooking, as it does not break up so badly as many kinds. But I commenced to write about picking. Downing says this variety should be picked before it is quite ripe, for if left to ripen on the tree it loses its flavor and becomes insipid. These are not exactly his words, but the same in substance.

Having two small trees that bore full, I followed his directions, leaving a few to ripen on the trees. The result is exactly contrary to the *book*. Those left on the tree were very fine, while, those picked first were juicy and eatable, to be sure, but very *flat*. What is the experience of others?

Bloomfield, C. W., 1870. GRANITE.

TWIN CALVES.

Though I am not able to answer positively the question of A. S. Hathaway as to whether "twin calves make as good cows as those not twins," I do know that we have in our yard a four-year-old cow which we consider a superior animal whose mate was a bull. My advice to any one having twin heifers would be wait and see, as I am disposed to consider the reports alluded to a hoax.

Brookfield, Vt., June 10, 1870. C. B. FISK.

About twenty years ago, I purchased two twin heifer calves. They proved to be the best cows I ever owned. JOHN BEATTIE.

Grafton, Me., June 20, 1870.

"THE AMERICAN IMPROVED BEET."

I have been out this morning at work in my beet yard, and as I labored, I bethought myself of what had appeared in your columns in regard to this beet. I obtained my seed of Mr. Rollins Lane of Cornwall Vt., about three years since, and have cultivated them quite extensively since that time; having now about three-fourths of an acre, all up and looking finely. I have disseminated the seed

widely among the farmers of this vicinity, so that there are several acres under cultivation the present season. I regard them altogether ahead of all other root crops. I have never seen but one person who has grown this variety from seed obtained elsewhere than the town mentioned above. This was a gentleman from Braintree, Vt., who, after a careful examination of specimens, avers that he has raised the same from seed purchased of seed growers. May it not, then, be raised in other localities besides this?

Enclosed are a few seeds which, though rather late in the season, will if sown soon, sufficiently mature to give you a good idea of the variety.

Brookfield, Vt., June 11, 1870. C. B. FISK.

REMARKS.—The seeds were received June 20, and immediately planted. We shall be glad to receive information in regard to the mode of cultivation adopted by our correspondent.

COMBING WOOLS.

To speak candidly, we consider the *climate* of England better fitted than ours for a rapid and economical development of mutton sheep. There they can have green feed (grass or turnips) off the ground most of the year—not scorched by our long dry summers—not locked up and rendered inaccessible by the frosts and snows of the severe winters of our Northern States. The artificial advantages are also even more in their favor in England. The high price of mutton, the inexhaustible demand for it, the accessibility to markets, the necessity of obtaining manure for grain crops, &c., &c.. probably render sheep about or nearly as profitable there as cattle, without taking the wool of the former into account.

Suppose that, owing to natural or artificial circumstances, or to both combined, England can now raise long-wool cheaper than the United States, does that prove that the United States are not fitted to its production.

1. We are yet to learn that long-wool sheep (Cotswolds, Leicesters, Lincolns, &c.,) are not, under the same treatment, or we should rather say under correspondingly good treatment, as healthy here as in England. They will not bear herding together in large numbers, or severe climatic exposures, or neglects of any kind here, nor will they in England.

2. We have not a particle of doubt that their mutton, when properly fattened, is as good here as in England.

3. We believe that under good management their wool is as heavy to the fleece and of as good quality here, in every respect, as in England.

4. It is probably true that the demand for mutton, and the all-important consideration of manure in England, renders them more indispensable there; but they now yield a handsome profit here on mutton and wool, to say nothing of the extra one of raising them to sell for breeding purposes. The latter advantage will, of course, diminish as the country fills up with them; but with a supply properly graduated to the demand, they will always remain profitable while the present wool tariff stands. This would seem to be absolutely inevitable. The relative consumption of mutton is constantly increasing. Our systems of husbandry are steadily improving, and both the necessity and advantage of utilizing manures are being better understood and acted on. Combing wool manufactures are rapidly increasing among us. We believe that the time will come when long-wool sheep will be regarded, throughout extensive regions of the United States, as essential an element to the success of mixed and convertible husbandry as they are in England. They are as essential on the rich producing grain farms, as the Merino is on the grazing farms to be found in every State, and on the broad natural pasturages of the South and West.—*Dr. Randall, in Rural New Yorker.*

TREATMENT OF BREEDING EWES.

As I have bred Leicester sheep for several years, and have carefully studied their habits, wants, &c., I will endeavor to reply to inquiries for information pertaining to the feeding of Leicester sheep at about lambing time. My idea is that all breeding animals, especially sheep, should be handled and fed with that thing in view long before the lambing time arrives. To begin, I would say have your ewes in good condition in the fall when they come into winter quarters, and then immediately take the ram from among them, as a great many rams, when they get into a small yard with the ewes, will chase and hunt them, which is not only injurious to the ewes, but very bad for their lambs, frequently causing abortion. Next, feed them carefully and regularly; do not allow your feeder to rush suddenly into their yard, making them nervous and wild, but let him approach them cautiously for a few days at every feeding, when they will get accustomed to him and he will be paid for his extra care and trouble. Also their feed should be regular as to time, quantity and quality, and not feed one morning at six, another at seven, and then at eight o'clock, but let the hour be the same every day, whether it be six, seven or eight, and then your sheep will not be worrying and waiting for it, as I can assure you that sheep know when feeding time arrives as well as we know when dinner time comes, and will not be easy until they get it.

If sheep are not in high condition when winter sets in, a little grain morning and night, (say half a pint to each sheep per day,) will be good for them; also some roots at noon are excellent. A mixture of oats and corn is my choice, and they should be of good quality. As lambing time approaches roots should be reduced and grain increased, as too many roots are apt to cause too much milk, which is not so desirable until after the lambs are two

or three weeks old, when the roots can be increased again. At lambing time be sure and make no changes, but feed the same amount, as also the same kind of grain at each feeding. I have seen very bad effects at that time from over-feeding, as also from changing from one kind of grain to another.

At lambing time, above all things be sure and keep your sheep quiet, and it should be the work of one person only, who understands his business, to see to them, as the ewe sometimes needs a little help in lambing; and the lamb, in its first and second nursing.—*Jurian Winne, in Country Gentleman.*

POOR AND GOOD TOOLS.

Every man and team on the farm costs me at least $750 a year; and I question if one farmer in a hundred duly appreciates how much he loses from having poor horses, and in not keeping them in vigorous health and in condition to do a maximum day's work. Do not many of us from having inefficient horses, poor ploughs, dull harrows, rusty cultivators, shaky wagons, and other imperfect implements and machines, lose from one-third to one-half the whole cost of man and team? And besides this, do we estimate how much we lose by getting behind with our work from these and similar causes? I had an old mowing machine that I got with the farm that "for the sake of saving it" I used for two years. Directly and indirectly I have no doubt that machine cost me $1,000! It cut just as well as a Wood's or a Buckeye, but it was a one-wheel machine with a wooden cutter-bar. We split the bar and had to repair it; then we broke the knife and had to take it to the blacksmith shop to have it welded. He "burnt" it, and broke it again. Then I sent to New York for a new knife. This cut off the finger of the only man who knew how to operate the machine and laid him up for several days. The consequence was, we did not get through haying until after wheat harvest. And you can imagine what kind of hay I had to feed out the next winter. Now I have two new mowers that a man cannot break if he tries; and in looking back I can hardly believe that I was ever so foolish as to waste time in tinkering an old worthless machine.—*J. Harris, in Am. Agriculturist.*

SUBSOILING.

I have seen a great deal in your paper on subsoiling, but your correspondents acknowledge that they have very little experience in the matter. According to one of them the farmers of Maine have only to provide themselves with a subsoil plough and go into the co-operative system to renovate their exhausted soils. Believe me, these revolutions in agriculture cannot take place thus rapidly. I have had considerable experience in subsoiling, and I never saw it have the slightest effect either in the present crop or improvement of the soil, unless accompanied with underdraining, except in isolated cases. For instance, the lower part of a field that has been constantly under the plough accumulates, by washing, a large quantity of rich soil that has been thoroughly exposed to the atmosphere. On such a soil the writer has seen the subsoiled land clearly defined in the next grain crop. One can easily imagine that clay land naturally underdrained, as underlain with plaster, rock or coal mines, would be benefited by the subsoil plough, but under ordinary cirt cumstances the writer believes that the attemps to renovate a worn out soil by these meane without underdraining, would be both a wast- of time and money. The writer has been constantly employed in both draining and subsoiling for the last seven years and consequently can speak somewhat advisedly.—*Cor. Maine Farmer.*

Glycerine and Yolk of Egg.—The Philadelphia *Journal of Pharmacy* has made known a formula for a preparation which is likely to prove valuable for external use. Four parts, by weight, of yolk of egg are to be rubbed in a mortar with five parts of glycerine. The compound has the consistence of honey, and is unctuous like fatty substances, over which it has the advantage of being easily removed by water. It is unalterable, a specimen having laid exposed to the air for three years unchanged. Applied to the skin, it forms a varnish which effectually prevents the action of the air. These properties render it serviceable for broken surfaces of all kinds, particularly erysipelas and sore nipples, and for cutaneous affections, of which it allays the itching.